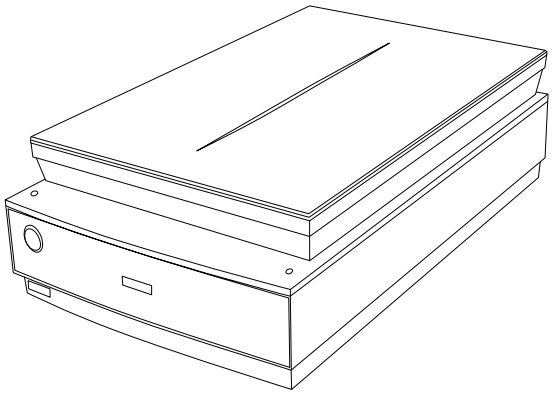
Service Manual



Color Image Scanner

EPSON Perfection V700 Photo

EPSON
EXCEED YOUR VISION

SESC05006

Downloaded from www.Manualslib.com manuals search engine

Notice

- All rights reserved. No part of this manual may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, or otherwise, without the prior written permission of SEIKO EPSON CORPORATION.
- All effort have been made to ensure the accuracy of the contents of this manual. However, should any errors be detected, SEIKO EPSON would greatly appreciate being informed of them.
- The contents of this manual are subject to change without notice.
- The above not withstanding, SEIKO EPSON CORPORATION can assume no responsibility for any errors in this manual or the consequences thereof.

EPSON is a registered trademark of SEIKO EPSON CORPORATION.

General Notice: Other product names used herein are for identification purpose only and may be trademarks or registered trademarks of their respective owners. EPSON disclaims any and all rights in those marks.

Copyright © **2005 SEIKO EPSON CORPORATION.**
IMAGING PRODUCTS CS & PL MANAGEMENT

Downloaded from www.Manualslib.com manuals search engine

PRECAUTIONS

Precautionary notations throughout the text are categorized relative to 1) Personal injury and 2) damage to equipment.

DANGER Signals a precaution which, if ignored, could result in serious or fatal personal injury. Great caution should be exercised in performing procedures preceded by DANGER Headings.

WARNING Signals a precaution which, if ignored, could result in damage to equipment.

The precautionary measures itemized below should always be observed when performing repair/maintenance procedures.

DANGER

1. ALWAYS DISCONNECT THE PRODUCT FROM THE POWER SOURCE AND PERIPHERAL DEVICES PERFORMING ANY MAINTENANCE OR REPAIR PROCEDURES.
2. NO WORK SHOULD BE PERFORMED ON THE UNIT BY PERSONS UNFAMILIAR WITH BASIC SAFETY MEASURES AS DICTATED FOR ALL ELECTRONICS TECHNICIANS IN THEIR LINE OF WORK.
3. WHEN PERFORMING TESTING AS DICTATED WITHIN THIS MANUAL, DO NOT CONNECT THE UNIT TO A POWER SOURCE UNTIL INSTRUCTED TO DO SO. WHEN THE POWER SUPPLY CABLE MUST BE CONNECTED, USE EXTREME CAUTION IN WORKING ON POWER SUPPLY AND OTHER ELECTRONIC COMPONENTS.
4. WHEN DISASSEMBLING OR ASSEMBLING A PRODUCT, MAKE SURE TO WEAR GLOVES TO AVOID INJURY FROM METAL PARTS WITH SHARP EDGES.

WARNING

1. REPAIRS ON EPSON PRODUCT SHOULD BE PERFORMED ONLY BY AN EPSON CERTIFIED REPAIR TECHNICIAN.
2. MAKE CERTAIN THAT THE SOURCE VOLTAGE IS THE SAME AS THE RATED VOLTAGE, LISTED ON THE SERIAL NUMBER/RATING PLATE. IF THE EPSON PRODUCT HAS A PRIMARY AC RATING DIFFERENT FROM AVAILABLE POWER SOURCE, DO NOT CONNECT IT TO THE POWER SOURCE.
3. ALWAYS VERIFY THAT THE EPSON PRODUCT HAS BEEN DISCONNECTED FROM THE POWER SOURCE BEFORE REMOVING OR REPLACING PRINTED CIRCUIT BOARDS AND/OR INDIVIDUAL CHIPS.
4. IN ORDER TO PROTECT SENSITIVE MICROPROCESSORS AND CIRCUITRY, USE STATIC DISCHARGE EQUIPMENT, SUCH AS ANTI-STATIC WRIST STRAPS, WHEN ACCESSING INTERNAL COMPONENTS.
5. DO NOT REPLACE IMPERFECTLY FUNCTIONING COMPONENTS WITH COMPONENTS WHICH ARE NOT MANUFACTURED BY EPSON. IF SECOND SOURCE IC OR OTHER COMPONENTS WHICH HAVE NOT BEEN APPROVED ARE USED, THEY COULD CAUSE DAMAGE TO THE EPSON PRODUCT, OR COULD VOID THE WARRANTY OFFERED BY EPSON.
6. WHEN USING COMPRESSED AIR PRODUCTS; SUCH AS AIR DUSTER, FOR CLEANING DURING REPAIR AND MAINTENANCE, THE USE OF SUCH PRODUCTS CONTAINING FLAMMABLE GAS IS PROHIBITED.

Downloaded from www.Manualslib.com manuals search engine

About This Manual

This manual describes basic functions, theory of electrical and mechanical operations, maintenance, and repair procedures of the printer. The instructions and procedures included herein are intended for experienced repair technicians, and attention should be given to the precautions on the preceding page.

Manual Configuration

This manual consists of six chapters and Appendix.

CHAPTER 1. PRODUCT DESCRIPTION
Describes the features and basic specifications of the product.

CHAPTER 2. OPERATING PRINCIPLES
Describes the electrical and mechanical basic operating principles of the product.

CHAPTER 3. TROUBLESHOOTING
Describes the step-by-step procedures for the troubleshooting.

CHAPTER 4. DISASSEMBLY/ASSEMBLY
Describes the step-by-step procedures for disassembling and assembling the product.

CHAPTER 5. ADJUSTMENT
Provides Epson-approved methods for adjustment.

CHAPTER 6. MAINTENANCE
Provides preventive maintenance procedures and the list of Epson-approved lubricants and adhesives required for servicing the product.

APPENDIX Provides the following additional information for reference:

- Connector pin assignments
- Electric circuit boards components layout
- Electrical circuit boards schematics
- Exploded diagram
- Parts List

Symbols Used in this Manual

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action. Be aware of all symbols when they are used, and always read NOTE, CAUTION, and WARNING messages.

Indicates an operating or maintenance procedure, practice or condition that is necessary to maintain the product's quality.

Indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of, equipment.

May indicate an operating or maintenance procedure, practice or condition that is necessary to accomplish a task efficiently. It may also provide additional information that is related to a specific subject, or comment on the results achieved through a previous action.

Indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in injury.

Indicates a product reassembly procedure, practice or condition that must be executed in accordance with the specified standards to maintain the product's quality.

Downloaded from www.Manualslib.com manuals search engine

Revision Status

Revision	Date of Issue	Description
A	December 20, 2005	First release

Downloaded from www.Manualslib.com manuals search engine

Contents

Chapter 1 Product Description

1.1 Features 9
1.2 Scanner Parts 10
1.3 Scanner Specification 10
1.4 Exterior Specifications 13
1.5 Control Codes 15
1.6 Error-Time Processing 16
1.7 Maximum Document Size and Placement 17

Chapter 2 Operating Principles

2.1 Engine Operation Outline 20
2.1.1 Carriage Unit 20
2.1.2 TPU Carriage Unit Outline 21
2.1.3 Drive Mechanism operation 22
2.1.4 Dual Lens System 24
2.2 Digital ICE Function Operation 25
2.2.1 Digital ICE for Photos Overview 25
2.2.2 Digital ICE for Film Overview 25
2.3 Circuit Boards 27
2.3.1 General View of Circuit Boards 27
2.3.2 The Main Board 28
2.3.3 The TPU Main Board 28
2.3.4 Image Processing Operation 29

Chapter 3 Troubleshooting

3.1 Overview 31
3.1.1 Self-Diagnosing 31
3.2 Troubleshooting 31

Chapter 4 Disassembly / Assembly

4.1 Overview 36
4.1.1 Precautions 36
4.1.2 Recommended Tools 37
4.1.3 Recommended Screws 37
4.2 Disassembly Procedure 38
4.2.1 Removing the TPU Unit 39
4.2.2 Removing the Upper Housing 40
4.2.3 Removing the SUB Board 43
4.2.4 Removing the Panel Board 44
4.2.5 Removing the Main Board 45
4.2.6 Removing the Carriage Unit 48
4.2.7 Removing the CR Motor 50
4.2.8 Removing the Driven Pulley Unit 53
4.2.9 Removing TPU Lower Housing 54
4.2.10 Removing the TPU Carriage Unit 55
4.2.11 Removing the TPU Unit Cable 57
4.2.12 Removing the SUB_B Board and TPU Inverter Board 58
4.2.13 Removing the SUB_C Board, SUB_D Board and Lamps 59
4.2.14 Removing the DRV Board 61
4.2.15 Removing the Hinges 62
4.2.16 Removing the TPU CR Motor 63
4.2.17 Removing Compression Spring 3.15 65

Chapter 5 Adjustment

5.1 No Special Adjustments 67

Chapter 6 Maintenance

6.1 Overview 69
6.1.1 Cleaning 69
6.1.2 Lubrication 69

Downloaded from www.Manualslib.com manuals search engine

Chapter 7 Appendix

7.1 Connectors 73
7.1.1 Connector Configuration 73
7.1.2 Connector Reference Table 73
7.2 Circuit Diagrams 74
7.3 Exploded Diagram 84
7.4 Service Parts List 89

Downloaded from www.Manualslib.com manuals search engine

CHAPTER

1

PRODUCT DESCRIPTION

Downloaded from www.Manualslib.com manuals search engine

1.1 Features

Dual Lens system allows superior resolutions of 4800 x 9600 and 6400 x 9600dpi

Delivers extraordinary image quality and detail

48-bit color depth and exceptional dynamic range (up to 4.0 Dmax)

Produces smooth gradations and intricate shadow detail from negatives and transparencies

State-of-the-art Digital ICE™ Technology

Automatically corrects tears, scratches, folds, and creases on both film and photos

Built-in 5.8" x 9.74" transparency unit (TPU) with moving light source

Scans up to twenty-four 35 mm negative images simultaneously

Oversized films (up to 8" x 10") can be scanned

Faster scans and better image quality

Innovative Epson Easy Photo Fix™ technology

Automatic color restoration and dust removal features

Includes three convenient scanning modes for maximum control and flexibility

Hi-Speed USB2.0 and FireWire® (IEEE1394) connectivity

EPSON Creativity Suite

Easy-to-use with thumbnail view function

Link indicator for easy scanning

Support for a variety of file types: BMP, JPEG, TIFF, RAW, PICT, and PDF

EPSON Scan

Graphic user interface: Full Auto Mode, Home Mode and Professional Mode

Allows image data files to be saved without a separate graphics application

Additional image editing tools: histogram, multi-level unsharp mask, de-screening and tone-curve editor

Full automatic mode (flatbed and film)

Thumbnail view support

Image enhancement functions: dust remover and grain reduction (supports a new tool for color restoration)

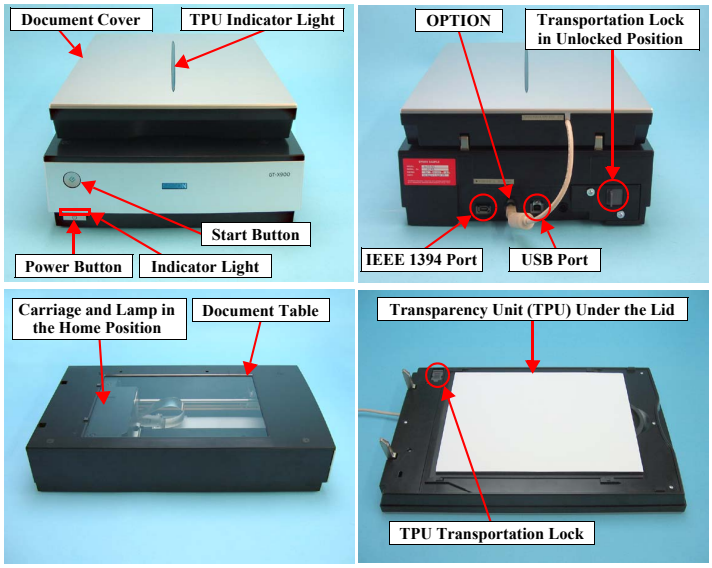
Natural or Vivid mode can be selected for processing scanned images

Compatible with Windows XP 64-Bit Edition

Scans multipage document to multipage PDF

Downloaded from www.Manualslib.com manuals search engine

1.2 Scanner Parts



1.3 Scanner Specification

Basic Specifications

Scanner type	Flatbed, color
Photoelectric device	6-line color CCD with micro lens
Scanning method	Moving carriage, stationary document
Effective pixels	40,800 x 56,160pixels at 4800dpi 37,760 x 62,336pixels at 6400dpi
Maximum document size	US letter or A4 size 8.5 x 11.7inches (216 x 297mm)
Optical resolution	4800dpi
Maximum hardware resolution*	4800dpi (main scan) x 9600dpi (subscan) 6400dpi (main scan) x 9600dpi (subscan)

Note *:
- Newly mounted Dual Lens system enables the two different resolutions. Super (6400dpi) and High (4800dpi)
  Resolution lenses can be switched depending document type and scan mode specified by the scanner driver.
- The maximum hardware resolution of 4800/6400 x 9600 dpi is achieved using EPSON's Micro Step Drive™ technology.
- Scanning 8" x 10" size at 4800dpi, 24 bit color is impossible under the following conditions:
  - When the image file type is Bmp or Tiff, the file types do not allow the file size to be over 4GB.
  - When the image file type is Jpeg, the file type does not allow the file size to be over 2GB.

Maximum interpolated resolution	12,800 dpi
Output resolution	25 to 12,800 dpi in 1 dpi increments
Speed (color)	12.3msec/line at 4800dpi 3.1msec/line at 600dpi
Command level	ESC/I (B8), FS
Pixel depth	16 bits per pixel (input and output)
Interfaces	USB1.1/2.0 (Type B receptacle connector) IEEE1394 (FireWire™)
Light source	White cold cathode fluorescent lamp
Reliability (MCBF)	100,000 cycles of carriage movement

Downloaded from www.Manualslib.com manuals search engine

Image processing function

Gamma correction	2 CRT levels 3 Printer levels 1 User defined level
Color correction	4 Levels standard, according to output: Impact-Dot Printer Thermal Printer Ink-Jet Printer CRT Display 1 User defined level
Brightness	7 levels (in EPSON Scan, gamma correction controls brightness)
Data processing	Halftone Processing Bi-level processing on the fixed threshold value (for the image data of bi-level and 4-level)

Dimensions

Product	Width: 12.3inches (30.8cm) Depth: 20.1inches (50.3cm) Height: 6.1inches (15.25cm) Weight: 14.5lb. (6.6 kg)

Electrical

Rated input voltage	100 - 120 VAC (100 V Model) 220 - 240 VAC (220 V Model)
Rated input frequency	50 - 60 Hz (100 V and 220 V models)
Rated input current	0.8A at 100VAC 0.4A at 200VAC
Power consumption	Operation: 32 W Standby mode: 19 W Sleep mode: 4 W
Energy conservation	International Energy Star® Program compliant
Warm up time	40 seconds max. at 25°C (TBD) 65 seconds max. at 5°C (TBD)
Current resistance	500VDC: > 100 MΩ (AC input terminal and DC output terminal)
Voltage resistance	3000VAC for 1 min. (AC input terminal and DC output terminal)
Static electricity	Contact discharge: 4.5 kV Air discharge: 8.5 kV

Environmental

Temperature	Operation: 41 to 95°F (5 to 35°C) Storage: -13 to 140°F (-25 to 60°C)
Humidity (non-condensing)	Operation: 10% to 80% Storage: 10% to 85%
Operating conditions	Ordinary office or home conditions; avoid extreme dust, direct sunlight, and strong light sources.

Downloaded from www.Manualslib.com manuals search engine

USB Interface

Interface type	Universal Serial Bus Specification Revision 2.0
Connector type	One self-powered receptacle, Type B. Must be connected directly to the host or to tier 1 in a hub

FireWire Interface

Interface type	IEEE 1394a-2000 compatible
Data transfer	Half-duplex data/strobe differential serial
Synchronization	Clock synchronization with DS-Link
Encoding/decoding	DS-Link
Logic level	3.3 V

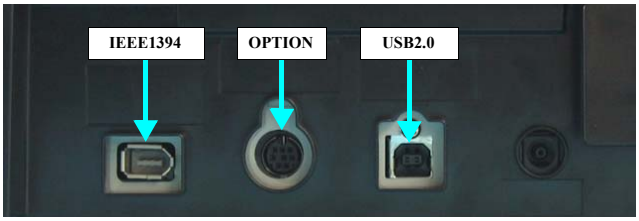


Figure 1-1. Interfaces

Operating System Compatibility

IEEE1394 I/F	Microsoft Windows XP Home, Professional Microsoft Windows 2000 Professional Microsoft Windows Me Mac OS X 10.2 or later*1
USB 1.1 I/F *2, 3	Microsoft Windows XP Home, Professional Microsoft Windows 2000 Professional Microsoft Windows 98 Second edition or later /Me Mac OS X 10.2 or later*1
USB 2.0 I/F*2, 3, 4, 5	Microsoft Windows XP Home, Professional Microsoft Windows 2000 Professional Mac OS X 10.2.7 or later*1

Note *1: EPSON Scan (EPSON driver)/SilverFast® works independently or only with Adobe® Photoshop® CS in Mac OS X native mode. Some applications and/or functions only work in Mac OS X classic mode.

*2: This device must be connected directly to the host or to a hub in tier 1 or 2. Use an approved USB cable.

*3: The functionality of USB port(s) is the responsibility of the host vendor.

*4: Microsoft USB2.0 driver is required.

*5: For PCs pre-installed with Windows 2000 Professional, Windows XP Home or Professional, or upgraded to Windows XP from Windows 2000 Professional only.

Lid TPU specification

Type	Moving carriage
Light source	White cold-cathode fluorescent lamp x 2 IR LED board x 2, each board has 24 LEDs
Max scan size	Standard: 5.9inches x 9.74inches (149mm x 247mm) Max: 8inches x 10inches (203mm x 254mm)*

Note *: With a Film Area Guide. Digital ICE and thumbnail view function cannot be used.

Film sizes	35mm (135) strip film:	24frames
	35mm (135) mounted film:	12frames
	Medium format film (120/220):	2frames
	4 inches x 5 inches film:	2frames*

Note *: Thumbnail view function cannot be used.

Power supply	24VDC ± 10%, 5VDC ± 5% Supplied by the scanner unit
Indicator LED	Blue, lit in synchronization with the TPU lamp.
Dimensions	Width: 11.9inches (29.8cm) Depth: 18.7inches (46.8cm) Height: 1.9inches (4.8cm)
Weight	Approx. 4.8lb (2.2kg)

Downloaded from www.Manualslib.com manuals search engine

Electromagnetic Interference Standards Compliance

100 V model	VCCI Class B (Japan) Harmonics Current Stand are JIS C 61000-3-2 (Japan) FCC 15B Class B (USA) CAN/CSA-CEI/IEC CISPR 22 Class B (Canada) (FCC represents) CNS13438 Class B/CNS14336 (Taiwan)
200 V model	EN55022 (CISPR Pub22)Class B EN61000-3-2 EN61000-3-3 EN55024 AS/NZS3548 Class B (Australia) Korea EMC Russia consumer protection law CCC (China)

1.4 Exterior Specifications

Explanation of switches

Power button	Turns the scanner on and off. When the power is turned on, the scanner is initialized.
Start button	Starts EPSON Creativity Suite. The button status can be checked with [ESC !].

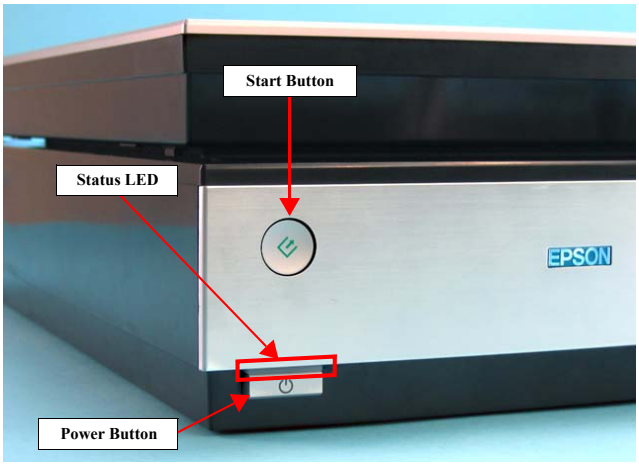


Figure 1-2. Locations of Switches and LEDs

Downloaded from www.Manualslib.com manuals search engine

Explanation of LED Indicators

Status LED

Table 1-1. Scanner Status and LED Indications

LED Indication	Status
Lit green	Ready
Flashing green slowly	Busy*1
Flashing red fast	Error*2

Note *1: Warm-up, scan, initialization, etc.

*2: Certain error conditions, such as Option Error or Command Error, may not cause the Status LED to turn red.

TPU lamp LED (blue) — Lights up when the TPU lamp is on and moves with the TPU Carriage.

External Drawing

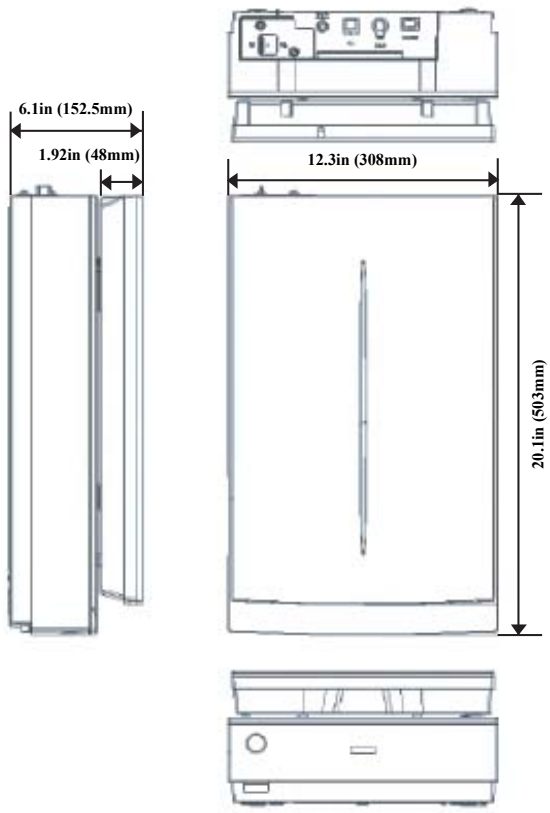


Figure 1-3. External Dimensions of Perfection V700 Photo

Downloaded from www.Manualslib.com manuals search engine

1.5 Control Codes

The following table is the list of control codes by the scanner.

Table 1-2. Control Code List

Category	Command Name	Code
Execution command	ID request	ESC I
	Status request	ESC F
	Extended status request	ESC f
	Status setting request	ESC S
	Scan start	ESC G
	Push Button status request	ESC !
	Extended ID request	FS I
	Scanner status request	FS F
	Scanning parameter request	FS S
	New scan start	FS G
Data form setting	Data format setting	ESC D i
	Resolution setting	ESC R n1 n2
	Zooming setting	ESC H i1 i2
	Scanning area setting	ESC A n1 n2 n3 n4
	Color setting	ESC C i
	Mirroring setting	ESC K i
	Scanning parameter setting	FS W
Correction processing	Brightness correction setting	ESC L i
	Gamma correction setting	ESC Z i
	Gamma correction table setting	ESC z i d [256]
	Sharpness control setting	ESC Q i
Image processing	Halftone process setting	ESC B i
	Auto area segmentation setting	ESC s i
	Dither pattern setting	ESC b i j d [j^2]
	Color correction setting	ESC M i
	Download color correction setting	ESC m d [9]
	Threshold value setting	ESC t i
Support and Miscellaneous	Scan mode setting	ESC g i
	Initialization	ESC @
	Line counter setting	ESC d i
	Option control	ESC e i
	Film type designation	ESC N i
	Focus position setting	ESC p i
	Focus position request	ESC q
	Warm-up cancel	ESC w
	Paper loading	PF
	Paper exit	FF
Control	Normal response	ACK
	Abnormal response	NACK
	Scanning stop	CAN
	Header	STX

Downloaded from www.Manualslib.com manuals search engine

1.6 Error-Time Processing

Table 1-3. Error Definition and Remedy List

Category	LED Indication	Cause	Scanner response	Recovery	Receivable Command
Command error	None	An invalid command or invalid command parameter was detected.	• The scanner ignores the incorrect command or parameter. Current setting maintained. • The scanner returns NACK and waits for the next command parameter.	The error condition is cleared when the scanner receives a valid command.	
Fatal error	Red LED flashes rapidly.	• The lamp is burnt out. • The main unit is faulty. • Firmware downloading failed. • The scanner was turned on without releasing the carriage lock.	• The scanner turns the carriage lamp off and stops the operation. • The scanner sets Bit 7 of the status bit.	• Turn the scanner off and then back on. • Send an initialization command (ESC @) to the scanner.	ESC F, ESC f, ESC @, FS F

Downloaded from www.Manualslib.com manuals search engine

1.7 Maximum Document Size and Placement

Reflective document

Size: 8.5in (216mm) W x 11.7in (297mm) H

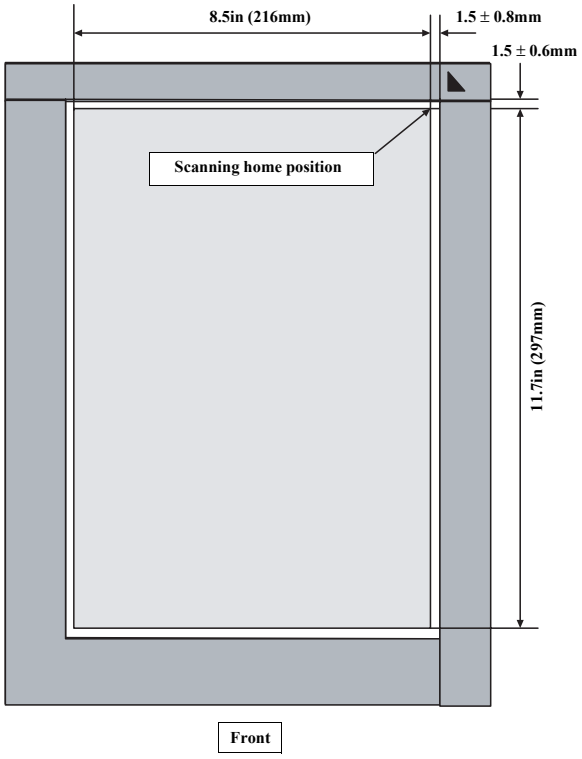


Figure 1-4. Reflective Document Scanning Range

Transparent document

Standard size: 5.9in (149mm) W x 9.74in (247mm) H

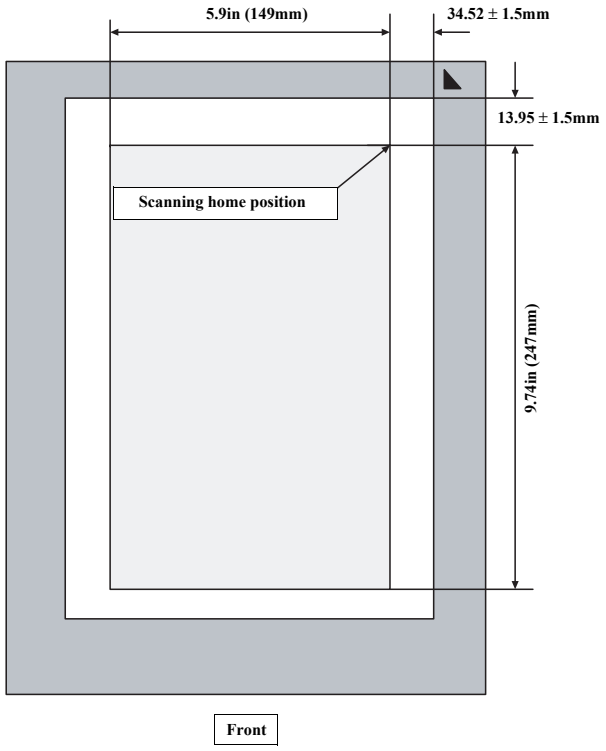


Figure 1-5. Transparent Document Scanning Range (Standard)

Downloaded from www.Manualslib.com manuals search engine

Transparent document

Maximum size: 8in (203mm) W x 10in (254mm) H

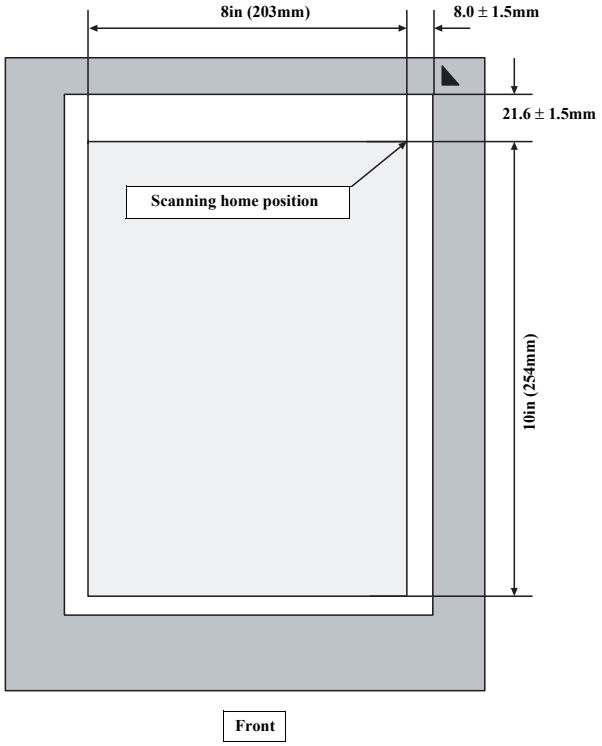


Figure 1-6. Transparent Document Scanning Range (Max)

Downloaded from www.Manualslib.com manuals search engine

CHAPTER

2

OPERATING PRINCIPLES

Downloaded from www.Manualslib.com manuals search engine

2.1 Engine Operation Outline

This section explains the functions and operating principles of the EPSON Perfection V700 Photo Scanner. This model has two scanning engines, the Photo scanner in the unit base and the TPU scanner in the lid, each consisting of a Carriage Unit and a Carriage Mechanism.

2.1.1 Carriage Unit

The Carriage Unit consists of the ISN Board, Inverter Board, Lamps (light source), Mirror/Lens Mechanism, Glass Plate, and Solenoid. See Figure 2-1, and Figure 2-2.

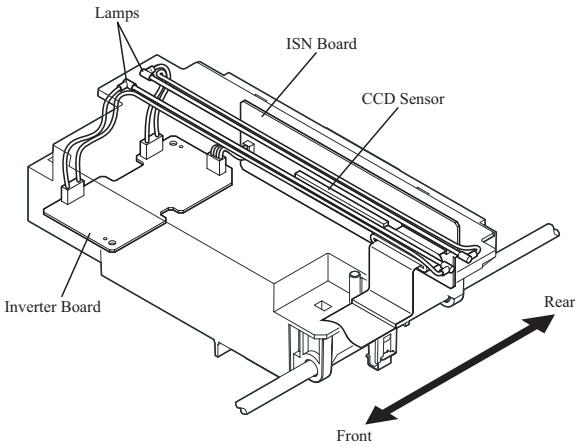


Figure 2-1. Carriage Unit Configuration

ISN Board contains the alternating six-line color CCD (R, G, B independent) sensor, and its control and drive circuits.

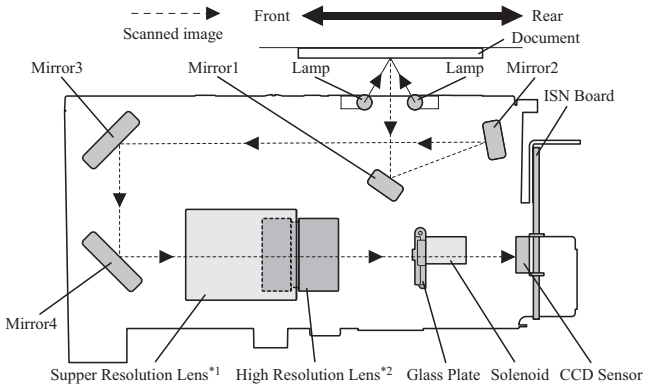
Inverter Board converts DC to AC and boosts the voltage to generate the current necessary to power the Lamps.

Lamps used as the primary light source are white cool-cathode fluorescent lamps. If the light output becomes unstable, the Panel LED flashes and the scanner enters standby mode until it becomes stable.

Mirror/Lens mechanism. The lamp light reflected off the scanned document passes through the Mirror/Lens mechanism in the Carriage Unit for correction of the beam axis before it reaches the CCD Sensor. The R, G, and B light components are extracted by the processing capabilities of the Color CCD Sensor itself, not by switching between the R, G and B of the light source as in other models.

Glass Plate compensates for the wavelength difference between the infrared light and visible light when the Digital ICE function is used.

Solenoid moves the Glass Plate into or out of the beam path, as applicable.



*NOTE*1,2: Perfection V700 Photo is equipped with two types of lens which enable two different resolutions. Depending on document type selected, one of the two lenses is automatically selected.*

Figure 2-2. Mirror/Lens Mechanism

Downloaded from www.Manualslib.com manuals search engine

2.1.2 TPU Carriage Unit Outline

The TPU Carriage Unit consists of TPU Inverter Board, Lamps (light source), SUB_C Board, and SUB_D Board.
See Figure 2-3.

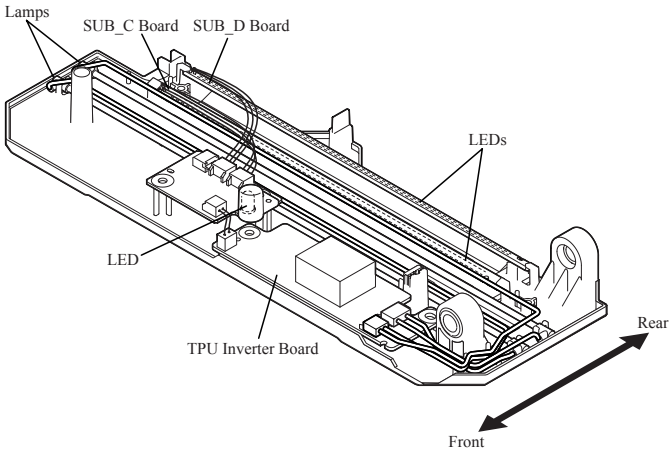


Figure 2-3. TPU Carriage Unit Configuration

Inverter Board converts DC to AC and boosts the voltage to generate the current necessary to power the Lamps.

Lamps used as the primary light source are white cool-cathode fluorescent lamps. If the light output becomes unstable, the Panel LED flashes and the scanner enters standby mode until it becomes stable.

SUB_C Board and SUB_D Board each contain LEDs to generate infrared light.

Downloaded from www.Manualslib.com manuals search engine

2.1.3 Drive Mechanism operation

Carriage Drive Mechanism Operation

A document is scanned in two directions. The primary direction is right-to-left along a single-pixel-wide line parallel to the carriage, between the lamps. Subsequent lines are scanned in the secondary direction by moving the carriage. See Figure 2-4.

To maximize performance, the scan-light beam data are processed by the ISN board while the next line is being scanned.

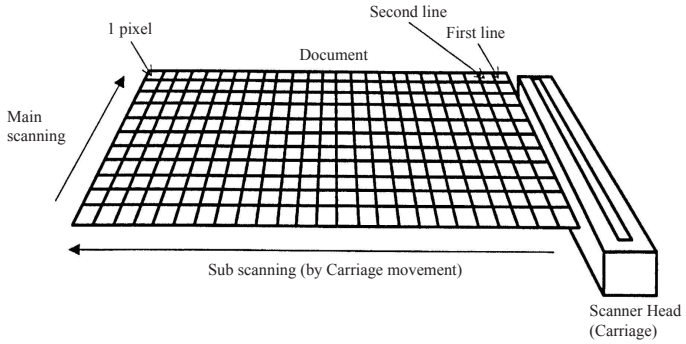


Figure 2-4. Carriage Movement

The Carriage Unit slides along the guide shaft in the secondary scanning direction. The CR (Carriage) Motor transmits its drive power to the CR Drive Belt attached to the Carriage Unit, via the Drive Pulley and Deceleration Gear. See Figure 2-5. The CR Motor is a stepper motor under open loop control. The image data scanning start position is determined by the CR Home Position (HP) Sensor located on the Control Board.

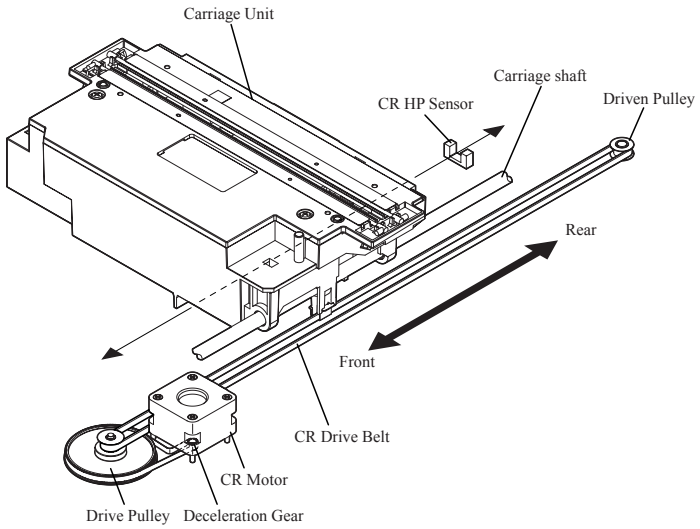


Figure 2-5. Carriage Operation

Downloaded from www.Manualslib.com manuals search engine

TPU Carriage Drive Mechanism Operation

The TPU Carriage Unit slides along the guide shaft in the secondary scanning direction as the TPU CR (Carriage) Motor transmits its drive power to the TPU CR Drive Belt connected to the TPU Carriage Unit. See Figure 2-6. The TPU CR Motor uses a stepper motor and is driven under open loop control.

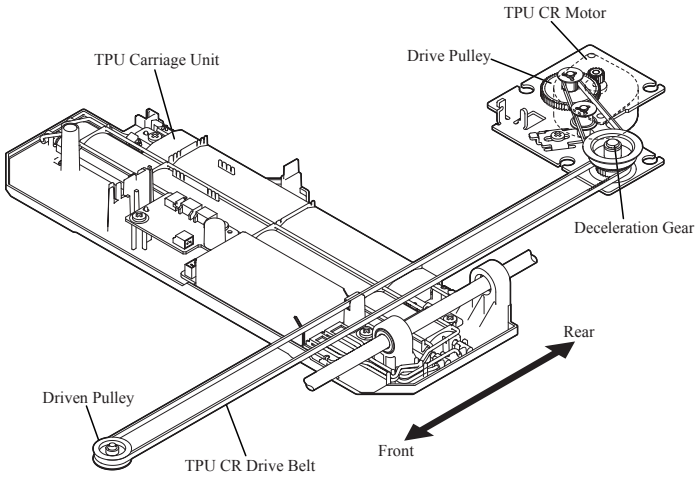


Figure 2-6. TPU Carriage Operation

Downloaded from www.Manualslib.com manuals search engine

2.1.4 Dual Lens System

Perfection V700 Photo is equipped with two types of lens which enable two different resolutions. The Lens motor switches between the two lenses. Depending on document type selected on the scanner driver, one of the two lenses (resolution) is automatically selected.

Table 2-1. Lenses (Resolutions) and Document Types

Lens	Resolution	Document Type	Maximum Width
High Resolution Lens	4800dpi	Reflective	8.5 in (215.9 mm)
		Transparent (with the film area guide)	8.0 in (203.2 mm)
Super Resolution Lens	6400dpi	Transparent (with the film holder)	5.9 in (149.9 mm)
		Transparent (when DigitalIce is used)	

CAUTION

The film holder must be used for scanning with the Super Resolution Lens as it does not support the film area guide.

Dual Lens System Operation

Both of the two lenses are mounted on the Holder Lens. The holder is usually located close to the Carriage shaft to use the High Resolution Lens. When the Film Holder or DigitalIce is used to scan a transparent document, the Lens motor moves the Holder Lens to use the Super Resolution Lens.
Because of the difference in focal length of the two lenses, a scanning area reflected on the CCD varies by each lens. As the number of CCD pixels differs between the two areas, the different resolutions can be obtained.

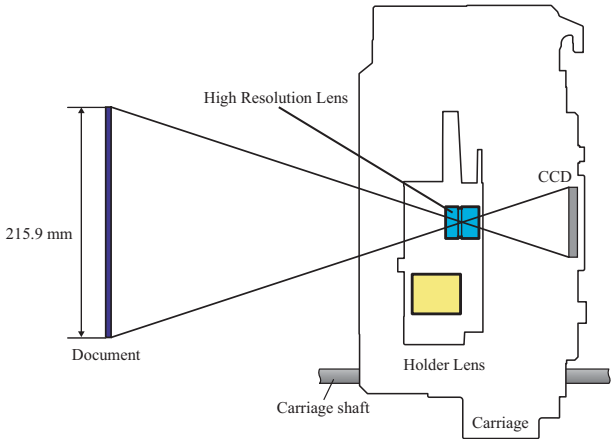


Figure 2-7. When using the High Resolution Lens

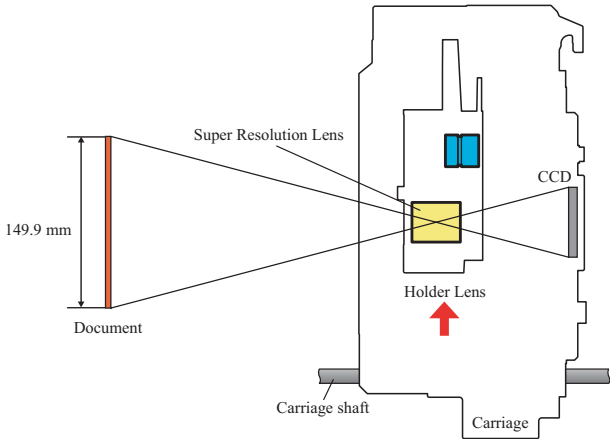


Figure 2-8. When using the Super Resolution Lens

Downloaded from www.Manualslib.com manuals search engine

2.2 Digital ICE Function Operation

This scanner features Digital ICE, an image correction process that uses a combination of hardware and software to detect and eliminate physical flaws, dust or dirt, either on the media or the scanner itself. There are two modes of Digital ICE, depending on the media being scanned: photos or film. (Film includes color or monochrome negative, and color positive.)

2.2.1 Digital ICE for Photos Overview

This scanner has two visible light lamps for reflection. The lamps are placed symmetrically to produce the same image when a scan is made twice. One of the properties of visible light is that it reflects irregularly (scatters) when it illuminates a physical flaw or dust.

By comparing the images obtained with each lamp, an inconsistency in the light pattern will reveal a physical flaw, dirt or dust. A software algorithm is employed to interpolate the surrounding image data, and the flaw or dirt is "removed" and "replaced" by the interpolated image data — thereby repairing the photo. In this way, tears, creases, thumbtack holes, etc. can be removed by Digital ICE.

Digital ICE for Photos Process Sequence

1. Energize lamp A and scan the image.
2. Energize lamp B and scan the image.
3. Electronically superimpose the images obtained from each lamp and detect any inconsistent image data, indicating a physical flaw or dust.
4. Replace the "flaw" image data with image data interpolated from adjacent areas.

2.2.2 Digital ICE for Film Overview

Because of its longer wavelength, infrared light normally passes completely through film media, such as negatives or slides, during a scan. Physical flaws or dust, however, do block infrared light. When a film document with dust or physical flaws is scanned using infrared light, the light is physically blocked by the flaw or dust, and the resulting image clearly shows only the dust and/or flaws present. By superimposing the images scanned with infrared light and visible light, the Film-ICE software is able to detect the inconsistency in the digitized data caused by the flaw and automatically remove it using interpolated image data to overwrite and correct the image.

Because of the difference in wavelength between infrared light and visible light, a secondary lens ("Glass Plate" in the images below) must be employed during the Film-ICE visible-light scan to compensate for the resulting difference in the size of the images so that they can be superimposed accurately. The Glass Plate is moved into and out of position by a solenoid.

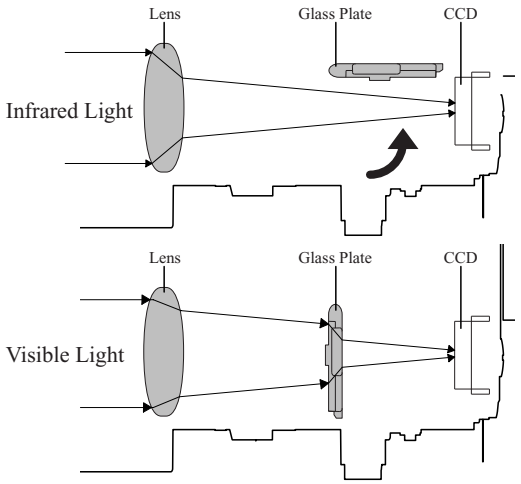
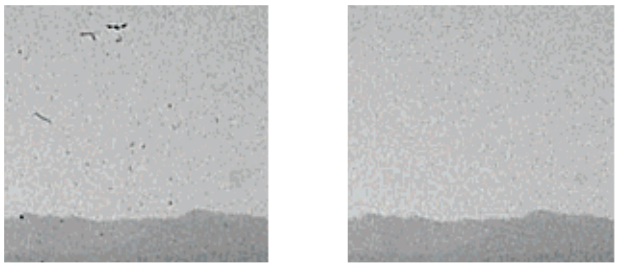


Figure 2-9. Refraction of Infrared Light and Visible Light

Downloaded from www.Manualslib.com manuals search engine

Digital ICE for Film Process Sequence

1. Read the visible light position. Two holes in the upper housing are scanned with visible light in order to register the home position of image being scanned.
2. Move the secondary lens (Glass Plate) into position and scan the film in visible-light.
3. Retract the secondary lens and scan the film in infrared-light.
4. Electronically superimpose the images obtained from each light source and identify the physical flaws and/or foreign matter.
5. Replace the "flaw" image data with image data interpolated from adjacent areas.



Dirt on the Slide After Correction

Figure 2-10. Extraction/Correction of Dust by Film-ICE Function

Downloaded from www.Manualslib.com manuals search engine

2.3 Circuit Boards

2.3.1 General View of Circuit Boards

The following diagram shows all circuit boards that control the Perfection V700 Photo Scanner.

Main Unit
- Main Board
- SUB Board
- Panel Board
- ISN Board
- Inverter Board

TPU
- DRV Board
- SUB_B Board
- SUB_C Board
- SUB_D Board
- TPU Inverter Board

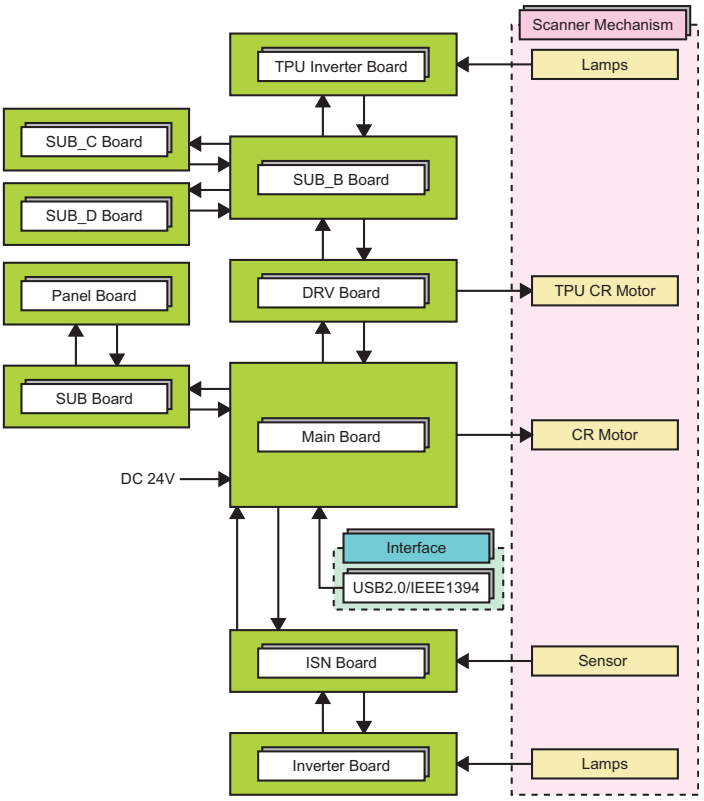


Figure 2-11. Block Diagram of Circuit Boards

Downloaded from www.Manualslib.com manuals search engine

2.3.2 The Main Board

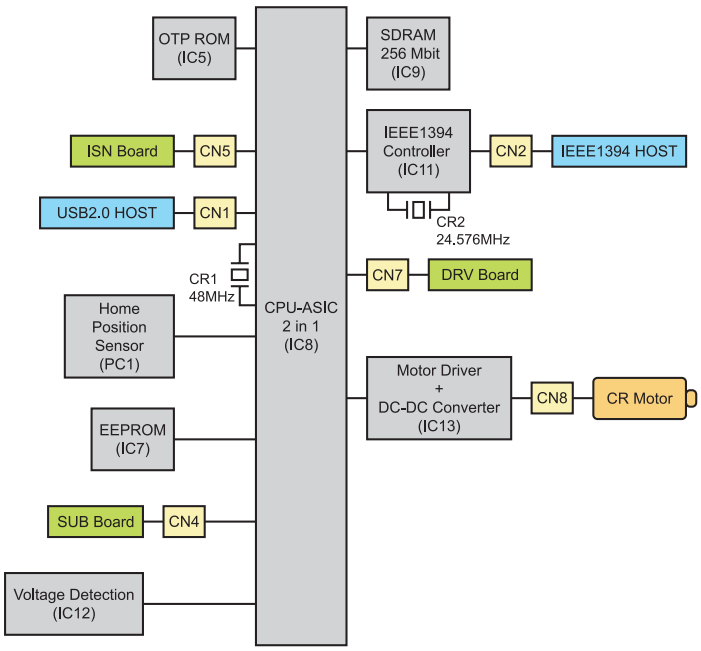


Figure 2-12. Block Diagram of the Main Board

2.3.3 The TPU Main Board

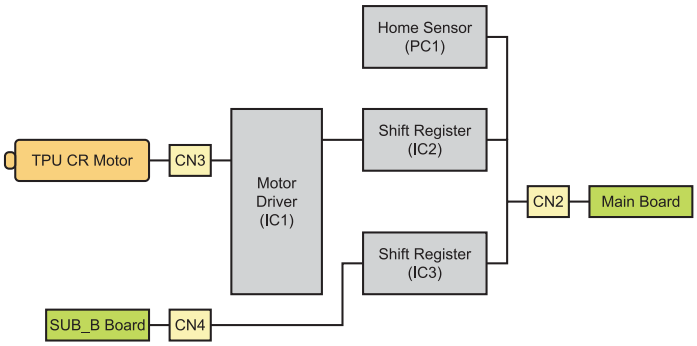


Figure 2-13. Block Diagram of the TPU Main Board

Downloaded from www.Manualslib.com manuals search engine

2.3.4 Image Processing Operation

The image processing sequence is explained below.

1. ISN Board: CCD Image Sensor
   - Opto-electronic transformation processing in which light reflected from the document surface is transformed into an electric charge.
   - Amplification processing
2. Main Board: Scanned image data processing
   - Analog-to-digital conversion processing in which the scanned image data generated as an analog electric signal is converted to a digital signal.
   - Shading correction processing, in which the scanned image data is corrected compared to white and black reference values.
   - Various image correction processing, such as gamma correction, color correction, halftone correction, etc. as determined by software settings on the host-computer.
3. The above processing is performed and the final scanned image data is output to the computer host.

Downloaded from www.Manualslib.com manuals search engine

CHAPTER

3

TROUBLESHOOTING

Downloaded from www.Manualslib.com manuals search engine

3.1 Overview

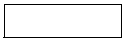
This chapter explains the remedies for errors detected by the scanner's self-diagnostic function, and provides a troubleshooting guide based on observed problems.

3.1.1 Self-Diagnosing

The scanner has a self-diagnostic function that automatically diagnoses the operating status of major components, and uses an LED indication to show the error status. This function detects the following error statuses shown in the table below. The corrective action is also listed.

Command Error

Table 3-1. Command Error

LED Indication	Cause	Self-Diagnosing Action
 (None)	An undefined command or command parameter was received.	• The scanner ignores the incorrect command or parameter, and the current settings are maintained. • The scanner returns NACK and waits for the next command or parameter.
Recovery	The error status is canceled upon receipt of a valid command.	

Fatal Error

Table 3-2. Fatal Error

LED Indication	Cause	Self-Diagnosing Action
(Rapid Blink, Red)	• The lamp has burned out. • The power is turned on without releasing the Carriage Lock • There is a fault in the main unit.	• The scanner switches the lamps off and stops the operation. • The scanner sets Bit 7 of the status bit.
Recovery	(After removing the cause of the error) • Turn the scanner off and then back on. • Send an initialization command (ESC @) to the scanner. • Receivable Command: ESC F, ESC f, ESC @, FS F	

3.2 Troubleshooting

This section provides troubleshooting procedures based on observed faults.

Refer to Table 3-3, and choose the table describes the general fault indication. Within the table, find the Problem that most closely matches what you observe and follow the procedures given in the table cross referenced in the right-hand column.

Table 3-3. Trouble Phenomenon, Cause and Troubleshooting Table

Problem	Definition	Troubleshooting Table
Scanned image quality error.	Scanned image is not clear.	3-4
The main unit does not operate when powered-on.	The main unit does not perform initialization operation.	3-5
Fatal error. Recovery cannot be made when power is switched on again.	The Carriage Unit does not operate.	3-6
	The Carriage Unit operates, but the scanner still indicates an error status.	3-7
	The Fluorescent Lamps are not lit.	3-8
The TPU does not work at all.	The TPU Carriage Unit does not operate.	3-9
	The Fluorescent Lamps of the TPU do not light up.	3-10
	The TPU LEDs do not light up.	3-11
The host does not recognize the scanner when power is switched on.	Interface error.	3-12

Downloaded from www.Manualslib.com manuals search engine

Table 3-4. Scanned Image Quality Error

Step	Possible Cause	Corrective Action	Reference
1	The Document Glass is not clean. (Image has white spots)	Clean the glass.	See Chapter 6
2	ISN Board failure	Replace the Carriage Unit.	See Section 4.2.6 on page 48.
3	Main Board failure	Replace the Main Board	See Section 4.2.5 on page 45.

Table 3-5. The Main Unit Does Not Operate When Powered-On

Step	Possible Cause	Corrective Action	Reference
1	A connector is disconnected.	Connect the disconnected connectors.	See Section 7.1.2 on page 73. See Chapter 4
2	CR Motor failure	Replace the CR Motor.	See Section 4.2.7 on page 50.
		Replace the Main Board.	See Section 4.2.5 on page 45.

Table 3-6. The Carriage Unit Does Not Operate

Step	Possible Cause	Corrective Action	Reference
1	The Carriage Lock has not been released.	Release the Carriage Lock.	See Step 3 of Section 4.2.2 on page 40.
2	The Upper Housing is not installed correctly.	Install it normally.	See Section 4.2.2 on page 40.
3	Carriage Mechanism failure • The CR Motor does not operate normally when powered-on with the Upper Housing removed. • The Carriage Unit does not move normally with the CR Motor removed.	Replace the Carriage Unit.	See Section 4.2.6 on page 48.
4	CR Motor failure	Replace the CR Motor.	See Section 4.2.7 on page 50.
		Replace the Main Board.	See Section 4.2.5 on page 45.

Table 3-7. The Carriage Unit Operates, Scanner Indicates Error

Step	Possible Cause	Corrective Action	Reference
1	Main Board failure	Replace the Main Board.	See Section 4.2.5 on page 45.

Downloaded from www.Manualslib.com manuals search engine

Table 3-8. The Fluorescent Lamps are Not Lit (Main Unit)

Step	Possible Cause	Corrective Action	Reference
1	The Carriage FFC is not connected to the Connector CN5 on the Main Board.	Connect the FFC to the Connector CN5 on the Main Board.	See Section 4.2.5 on page 46. (Figure 4-20)
2	Carriage Unit failure	Replace the Carriage Unit.	See Section 4.2.6 on page 48.
3	Main Board failure	Replace the Main Board.	See Section 4.2.5 on page 45.

Table 3-9. The TPU Carriage Unit Does Not Operate

Step	Possible Cause	Corrective Action	Reference
1	The OPTION Connector CN7 on the main unit and the DRV Board Connector CN2 are not connected with the TPU Unit cable.	Connect the connectors with the TPU Unit cable.	See Section 4.2.1 on page 39. See Section 4.2.11 on page 57.
2	The TPU Carriage Lock has not been released.	Release the TPU Carriage Lock.	See Step 3 of Section 4.2.9 on page 54.
3	The TPU Lower Housing is not installed correctly.	Reinstall it correctly.	See Section 4.2.9 on page 54.
4	The TPU Carriage Mechanism has failed • The TPU CR Motor does not move normally when powered-on with the TPU Lower Housing removed. • The TPU Carriage Unit does not move normally with the TPU CR Motor removed.	Replace the TPU Carriage Unit.	See Section 4.2.10 on page 55.
5	TPU CR Motor failure	Replace the TPU CR Motor.	See Section 4.2.16 on page 63.
6	DRV Board failure	Replace the DRV Board.	See Section 4.2.14 on page 61.
7	Main Board failure	Replace the Main Board.	See Section 4.2.5 on page 45.

Table 3-10. The Fluorescent Lamps of the TPU Do Not Light Up

Step	Possible Cause	Corrective Action	Reference
1	The OPTION Connector CN7 on the main unit and the DRV Board Connector CN2 are not connected with the TPU Unit cable.	Connect the connectors with the TPU Unit cable.	See Section 4.2.1 on page 39. See Section 4.2.11 on page 57.
2	The Lamp Connector is not connected to Connector CN2 and CN3 on the TPU Inverter Board.	Connect the Lamp Connector to CN2 and CN3 connectors on the TPU Inverter Board.	See Section 4.2.12 on page 58. (Figure 4-47)
3	Connector CN1 on the TPU Inverter Board and Connector CN3 on the SUB_B Board are not connected to the cable.	Connect CN1 and CN3 with the cable.	See Section 4.2.12 on page 58. (Figure 4-46 and Figure 4-47)
4	The DRV-SUB_B FFC is not connected to Connector CN1 on the SUB_B Board and Connector CN4 on the DRV Board.	Connect the DRV-SUB_B FFC to CN1 on the SUB_B Board and CN4 on the DRV Board.	See Section 4.2.10 on page 56. (Figure 4-40) See Section 4.2.14 on page 61. (Figure 4-54)
5	TPU Inverter Board failure	Replace the TPU Inverter Board.	See Section 4.2.12 on page 58.
6	DRV Board failure	Replace the DRV Board.	See Section 4.2.14 on page 61.
7	Main Board failure	Replace the Main Board.	See Section 4.2.5 on page 45.

Downloaded from www.Manualslib.com manuals search engine

Table 3-11. The TPU LEDs Do Not Light Up

Step	Possible Cause	Corrective Action	Reference
1	The DRV-SUB_B FFC is not connected to Connector CN1 on the SUB_B Board and Connector CN4 on the DRV Board.	Connect the DRV-SUB_B FFC to CN1 on the SUB_B Board and CN4 on the DRV Board.	See Section 4.2.10 on page 56. (Figure 4-40) See Section 4.2.14 on page 61. (Figure 4-53)
2	Connector CN2 and CN4 on the SUB_B Board are not connected.	Connect CN2 and CN4.	See Section 4.2.12 on page 58. (Figure 4-46)
3	Failure of the SUB_C Board and the SUB_D Board	Replace the SUB_C Board and the SUB_D Board.	See Section 4.2.13 on page 59.
4	DRV Board failure	Replace the DRV Board.	See Section 4.2.14 on page 61.
5	Main Board failure	Replace the Main Board.	See Section 4.2.5 on page 45.

Table 3-12. Interface Error

Step	Possible Cause	Corrective Action	Reference
1	The host computer does not support USB 2.0 or IEEE 1394.	Replace or modify the host computer.	-
2	The TWAIN Driver supplied with the scanner has not been installed correctly.	Install (reinstall) the TWAIN Driver for the Perfection V700 Photo.	-
3	The USB 2.0 or IEEE 1394 cables are damaged.	Replace the USB 2.0 or IEEE 1394 cables.	-
4	Main Board failure	Replace the Main Board.	See Section 4.2.5 on page 45.

Note : USB 2.0 may be installed but disabled on the host computer. Check the **Device Manager** under Windows.

Downloaded from www.Manualslib.com manuals search engine

CHAPTER

4

DISASSEMBLY / ASSEMBLY

Downloaded from www.Manualslib.com manuals search engine

4.1 Overview

This chapter explains the procedures for disassembling the major units and parts of the product. Unless otherwise explained, reassembly should be carried out in the reverse order of the disassembly procedure. When you have to remove any parts or components that are not described in this chapter, refer to the exploded diagram in the Appendix.
Before starting disassembly, always read the precautions described in the next section.

4.1.1 Precautions

Before starting the disassembly or reassembly of the product, read the following precautions given under the headings "WARNING" and "CAUTION".

WARNING

- Before disassembling or reassembling this product, always disconnect the Power Cable and Interface Cable. When you have to work with power on for voltage measurement, etc., use extreme care not to get an electric shock and do the work in accordance with the procedures given in this manual.
- To prevent your hands from being cut by sharp edges, always wear gloves before starting disassembly or reassembly.
- When touching any internal components, use static electricity discharge equipment such as anti-static wrist straps.

CAUTION

- Provide sufficient work space for disassembling and reassembling.
- Always use only the recommended tools for disassembly, reassembly and adjustment.
- Be sure to tighten the screws to the specified torque.
- Use the specified grease for lubrication. Refer to Chapter 6 for details.
- Since a prototype was used to illustrate these disassembly and assembly procedures, the appearance of some parts may differ from those on an actual product. The procedures themselves, however, are accurate for the retail model.
- Do not carry the scanner by its upper portion. Always hold the bottom to carry it.
- When using compressed air products; such as air duster, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.

The following figure shows the definition of the scanner orientations used in this chapter.

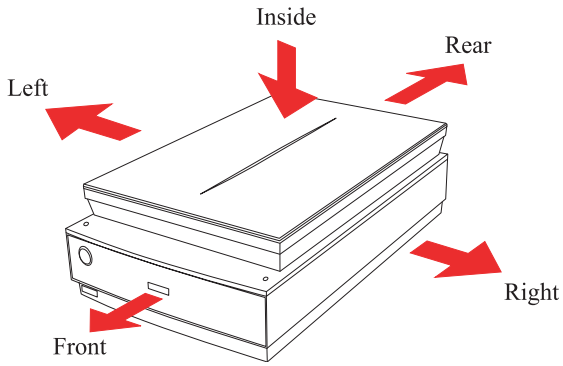


Figure 4-1. Orientation Definition

Downloaded from www.Manualslib.com manuals search engine

4.1.2 Recommended Tools

To protect this product from damage, use the tools indicated in the following table.

Table 4-1. Specified Tools

Name	Epson Part Number
Phillips screwdriver, No. 2	1080532
Flat-blade screwdriver	1080527
Tweezers	1080561
Hexagonal Box driver, 5mm	1080584
Long-nose pliers	1080561
Open-end wrench	1080580
Hexagonal wrench	1080589

4.1.3 Recommended Screws

The following table indicates the screws used in the EPSON Perfection V700 Photo Scanner.

Table 4-2. Recommended Screws

No.	Name	Definition
1	C.B. 3x3	Phillips Bind Screw, size M3, 3 mm length
2	C.B.P. 3x6	Phillips Bind P-tite Screw, size M3, 6 mm length
3	C.B.P. 3x8	Phillips Bind P-tite Screw, size M3, 8 mm length
4	C.B.P. 3x10	Phillips Bind P-tite Screw, size M3, 10 mm length
5	C.B.P. 3x12	Phillips Bind P-tite Screw, size M3, 12 mm length
6	C.B.P. 4x12	Phillips Bind P-tite Screw, size M4, 12 mm length
7	C.B.S. 3x5	Phillips Bind S-tite Screw, size M3, 5 mm length
8	C.C.P. 3x8	Phillips Cup P-tite Screw, size M3, 8 mm length
9	C.P.F.P. 3x8	Phillips Pan Flange P-tite Screw, size M3, 8 mm length
10	C.P.F.S. 3x10	Phillips Pan Flange S-tite Screw, size M3, 10 mm length
11	H.N.-2,3	Hex-Nut Class-2, 3 mm
12	H.N.,5	Hex-Nut, 5 mm

Downloaded from www.Manualslib.com manuals search engine

4.2 Disassembly Procedure

This section illustrates how to remove the main components of this product. Unless otherwise specified, the reassembly procedure is the reverse of the disassembly procedure. For additional assembly illustrations, refer to the exploded diagrams in the Appendix.

The following flowchart shows the disassembly procedure step-by-step, and the section and page number where the procedure is described.

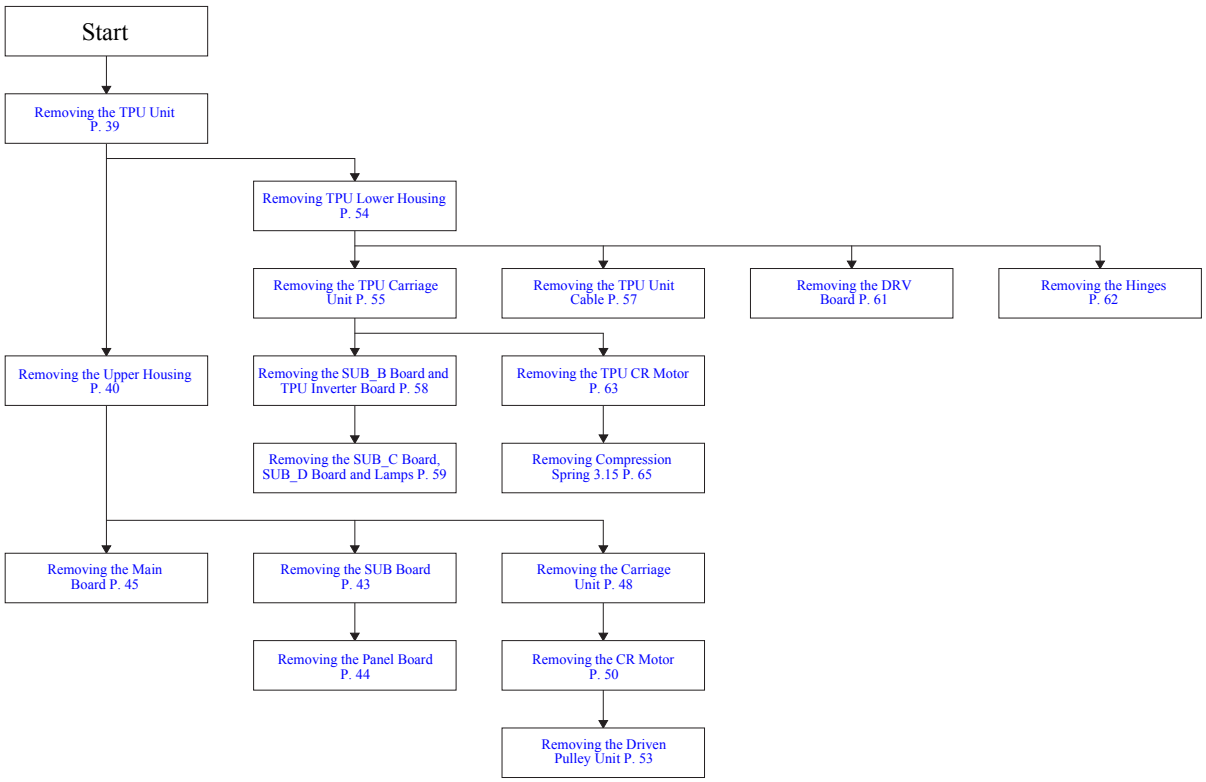

Start
Removing the TPU Unit P. 39
Removing TPU Lower Housing P. 54
Removing the TPU Carriage Unit P. 55
Removing the TPU Unit Cable P. 57
Removing the DRV Board P. 61
Removing the Hinges P. 62
Removing the Upper Housing P. 40
Removing the SUB_B Board and TPU Inverter Board P. 58
Removing the TPU CR Motor P. 63
Removing the SUB_C Board, SUB_D Board and Lamps P. 59
Removing Compression Spring 3.15 P. 65
Removing the Main Board P. 45
Removing the SUB Board P. 43
Removing the Carriage Unit P. 48
Removing the Panel Board P. 44
Removing the CR Motor P. 50
Removing the Driven Pulley Unit P. 53

Figure 4-2. Disassembly Flowchart

Downloaded from www.Manualslib.com manuals search engine

4.2.1 Removing the TPU Unit

1. Disconnect the TPU Unit Connector CN7 on the rear of the Main Unit.

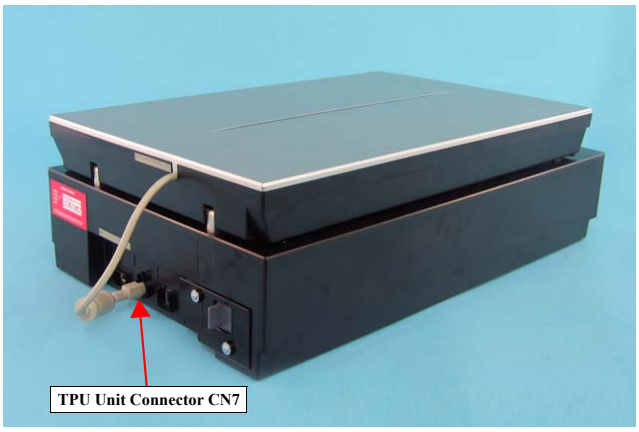


Figure 4-3. Removing the TPU Unit Connector

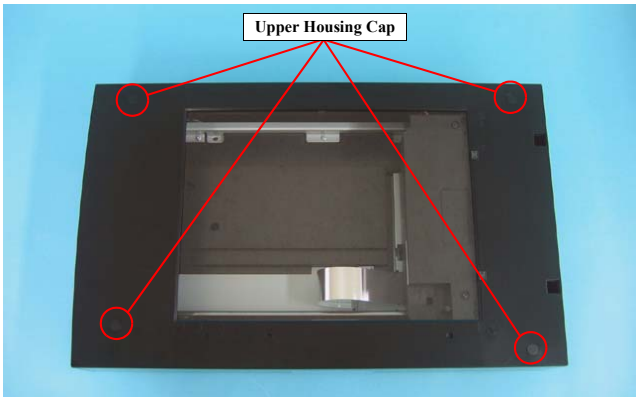
2. Hold both ends of the TPU Unit and then lift and remove it.

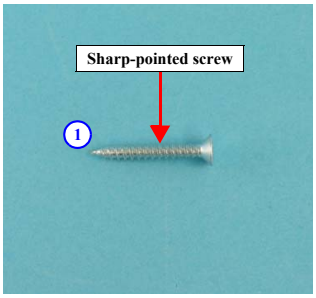
Figure 4-4. Removing the TPU Unit

Downloaded from www.Manualslib.com manuals search engine

4.2.2 Removing the Upper Housing

1. Remove the TPU Unit. See Section 4.2.1 on page 39.
2. Remove the Upper Housing Cap according to the following procedure.
   1. Prepare a sharp-pointed screw. Any size will work.
   2. Stick the screw into the center of the Upper Housing Cap.





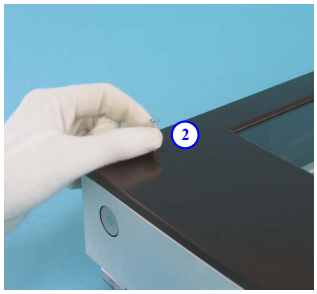
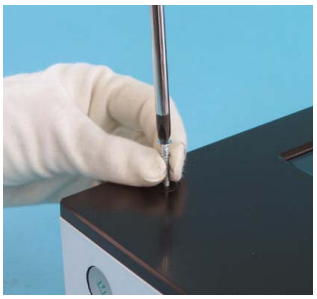


Figure 4-5. Removing the Upper Housing Cap (1)

CAUTION

When performing the next step, be careful not to turn the sharp-pointed screw too much, or the screw may go through the Upper Housing Cap and damage the screw beneath the cap.

   3. Turn the screw with a driver until it gets enough grip to pull the Upper Housing Cap, and pull the cap out.



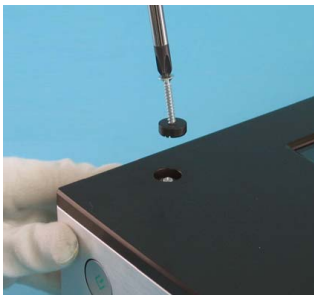


Figure 4-6. Removing the Upper Housing Cap (2)

   4. Remove the other three Upper Housing Caps using the same procedure.
3. Release the Carriage Lock by sliding its tab in the direction of the arrow.

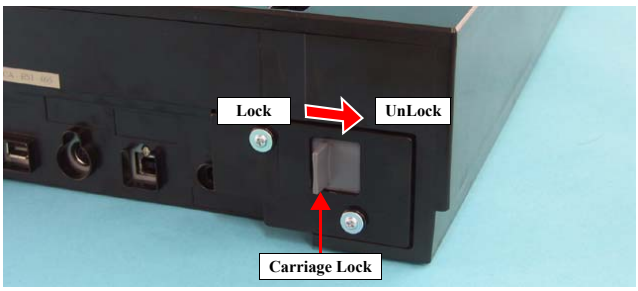


Figure 4-7. Releasing the Carriage Lock

Downloaded from www.Manualslib.com manuals search engine

CAUTION

The Perfection V700 Photo is equipped with two kinds of spacers (Adjuster Spacer and Adjuster B Spacer) to adjust the gap between the Carriage and the Upper Housing Glass so that the dual lens system function is ensured.
The number of spacers and their positions vary from unit to unit. Care should be exercised not to move or lose the spacers.

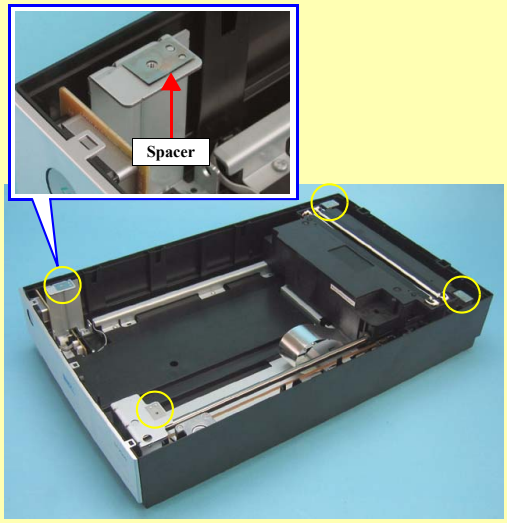
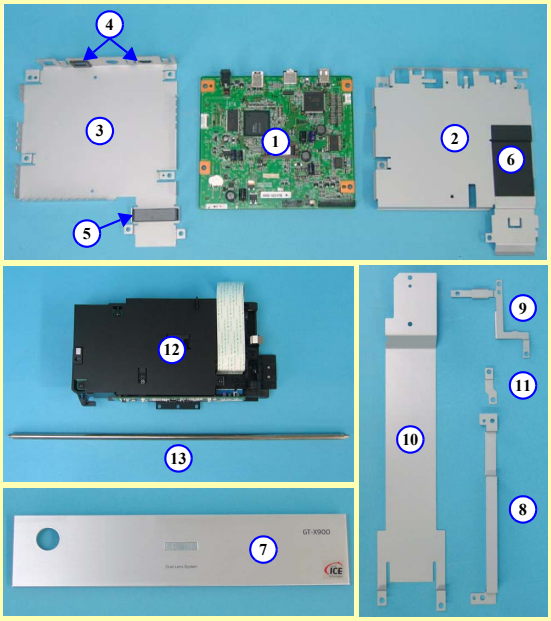


Figure 4-8. Cautions for Spacers

In case of loss of the spacers or accidental removal of them losing their original places, replace the Lower Housing. The Lower Housing Assy. ASP is provided with factory-installed spacers.

The Lower Housing Assy. ASP, however, does not include the following parts. Remove them from the previous Lower Housing Assy. and reinstall them to the new one. (Refer to Chapter7 Exploded Diagram on page 84 and Service Parts List on page 89.)

1. Main Board
2. Upper Main Board Cover
3. Lower Main Board Cover
4. USB Dust-Resistant Foam
5. Ferrite Core
6. Main Board Cover Sheet
7. Front Cover
8. Harness B Cover
9. Harness C Cover
10. FFC Cover
11. Ground Plate
12. Carriage Unit
13. Carriage Shaft



Downloaded from www.Manualslib.com manuals search engine

14. Remove the four C.P.F.S. M3 x 10 screws that secure the Upper Housing.

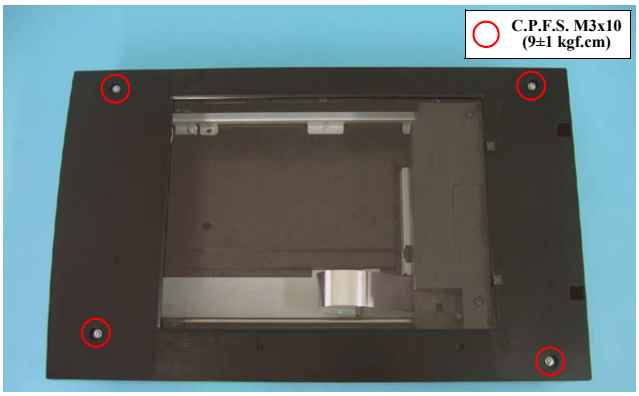


Figure 4-9. Removing the Upper Housing (1)

15. Lift the Upper Housing slowly and remove it.

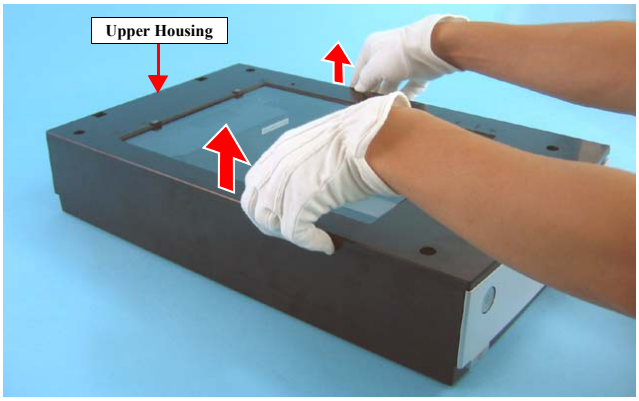


Figure 4-10. Removing the Upper Housing (2)

Downloaded from www.Manualslib.com manuals search engine

4.2.3 Removing the SUB Board

1. Remove the Upper Housing. See Section 4.2.2 on page 40.
2. Remove the C.B.P. M3 x 8 screw that secure the SUB Board Unit, and remove it.

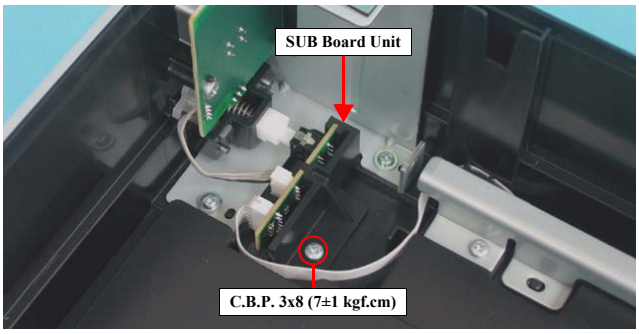


Figure 4-11. Removing the SUB Board Unit

3. Disconnect the Panel Board Connector CN1 and the SUB Board Connector CN2 connected to the SUB Board.

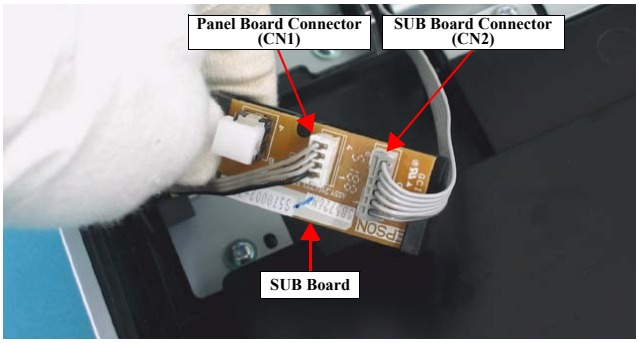


Figure 4-12. Removing the SUB Board Unit (1)

4. Remove the SUB Board from the SUB Board Holder.

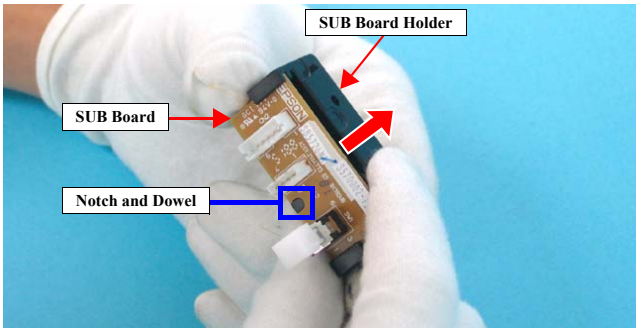


Figure 4-13. Removing the SUB Board Unit (2)

REASSEMBLY

- When installing the SUB Board to the Sub Board Holder, match the notch and tab as shown in Figure 4-13.
- Route the SUB Board Connector cable through the notches on the Lower Housing as shown below.

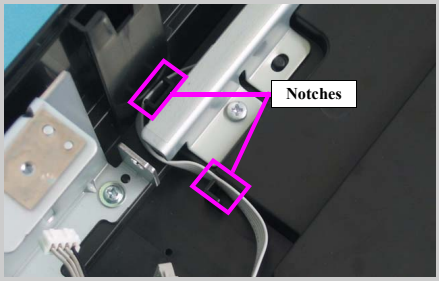


Figure 4-14. Routing the SUB Board Connector Cable

Downloaded from www.Manualslib.com manuals search engine

4.2.4 Removing the Panel Board

1. Disconnect the Panel Board Connector CN1 from the Sub Board. See Step 1 to Step 3 in Section 4.2.3
2. Remove the C.B.P. M3 x 8 screw that secure the Front Cover, and remove it.

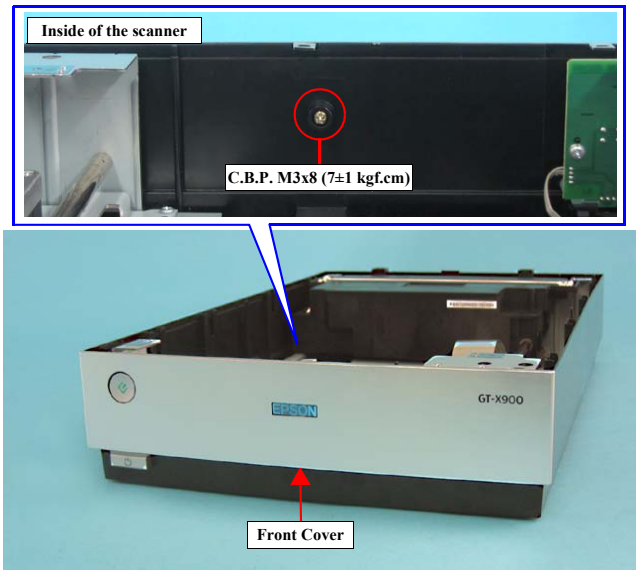


Figure 4-15. Removing the Front Cover

3. Remove the C.B.P. M3 x 8 screw that secure the Panel Board and remove the board releasing it from the hooked tab.

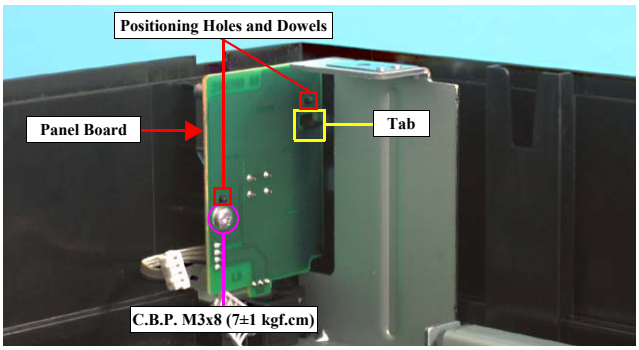


Figure 4-16. Removing the Panel Board

REASSEMBLY

- If the LED Cover accidentally becomes detached, install it matching the positioning holes and guide pins as shown below.

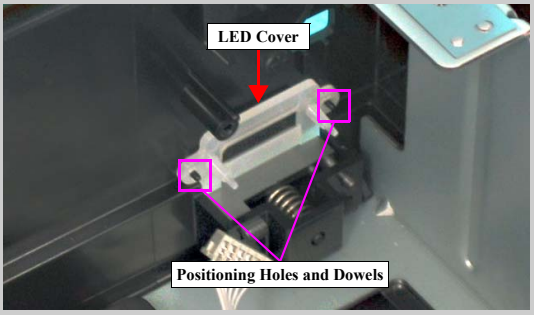


Figure 4-17. Installing the LED Cover

- When installing the Panel Board, match the positioning holes and the guide pins as shown in Figure 4-16.

Downloaded from www.Manualslib.com manuals search engine

4.2.5 Removing the Main Board

1. Remove the Upper Housing. See Section 4.2.2 on page 40.
2. Move the Carriage Unit to the centre.

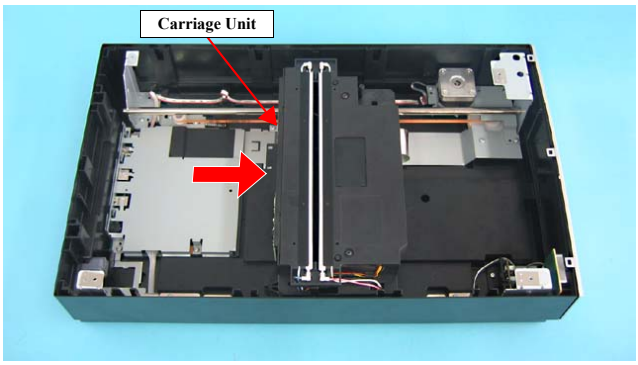


Figure 4-18. Centering the Carriage Unit

3. Remove the Main Board Cover Sheet from the Upper Main Board Cover.
4. Remove the four C.B.P. M3 x 8 screws and C.B.P. M3 x 10 screw that secure the Upper Main Board Cover.
5. With the rear of the Upper Main Board Cover lifted, slide the cover toward the rear to release tab A, and remove the Upper Main Board Cover.

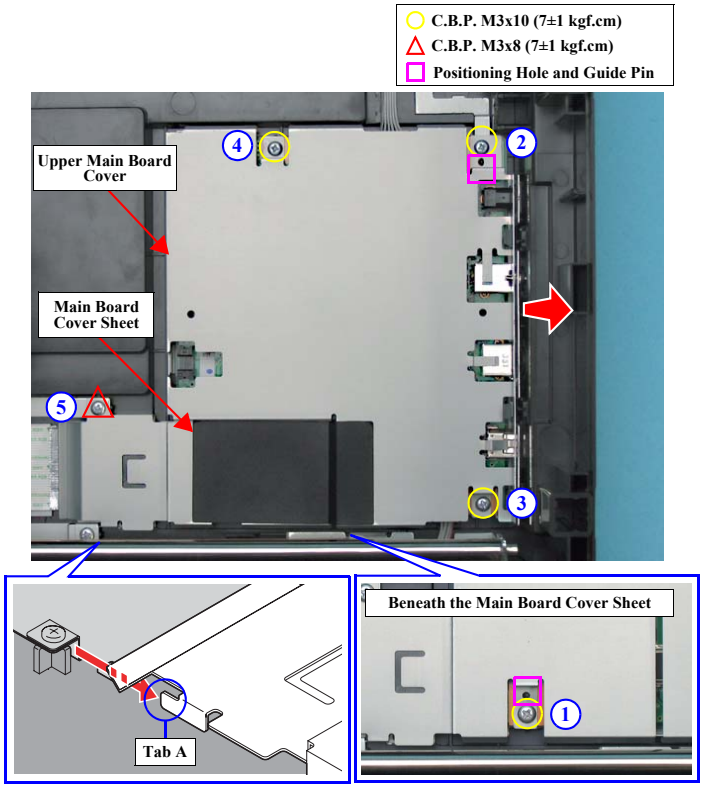


Figure 4-19. Removing the Main Board Cover

Downloaded from www.Manualslib.com manuals search engine

6. Remove the Ferrite Core from the Lower Main Board Cover.
7. Disconnect the Carriage FFC from CN5 on the Main Board, then remove the Ferrite Core.
8. Disconnect the Sub Board Connector CN4 from the Main Board.
9. Remove the C.P.F.P. M3 x 8 screw and C.B.P. M3 x 8 screw that secure the Harness C Cover, and remove the Harness C Cover.
10. Remove the C.P.F.P. M3 x 8 screw that secures the Ground Plate and remove the Ground Plate.

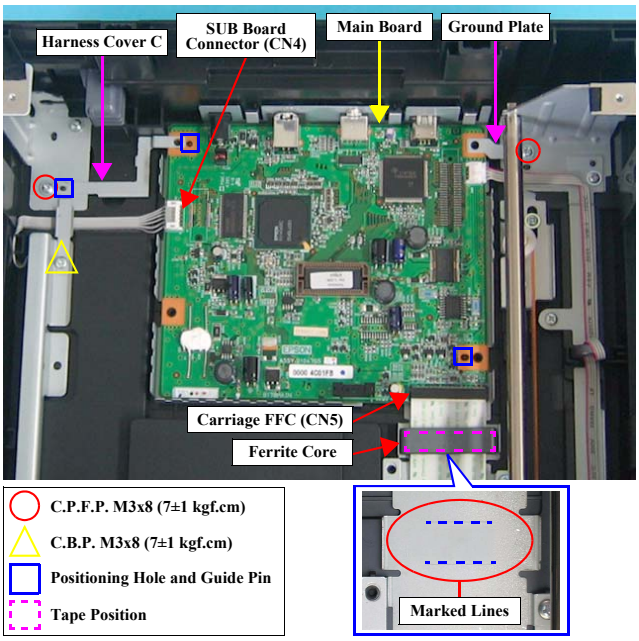


Figure 4-20. Removing the Main Board (1)

11. Lift the Main Board and disconnect the CR Motor Relay Connector CN9, then remove the Main Board.

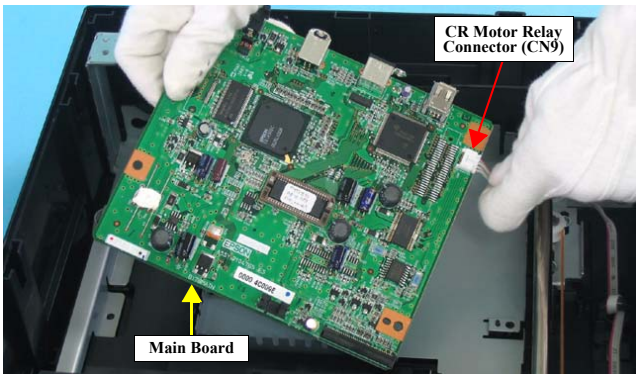


Figure 4-21. Removing the Main Board (2)

Downloaded from www.Manualslib.com manuals search engine

REASSEMBLY

- Connect the Carriage FFC to the Main Board using the following procedure.

1. Pass the Carriage FFC through the Ferrite Core.
2. Connect the Carriage FFC to the Main Board.
3. Aligning with the marked lines, attach the Ferrite Core to the Lower Main Board Cover with a piece of two-sided tape.

- When installing the Main Board and Harness C Cover, match the positioning holes and guide pins as shown in Figure 4-20 on page 46.
- Follow the procedure given below to install the Upper Main Board Cover.

1. Put the three tabs of the Lower Main Board Cover into the holes on the Upper Main Board Cover as shown below.

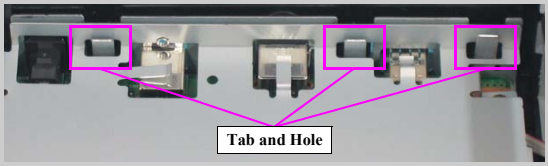


Figure 4-22. Installing the Main Board Cover

2. Match the positioning holes and guide pins as shown in Figure 4-19 on page 45.
3. Tighten the screws in the order given in Figure 4-19 on page 45.

Downloaded from www.Manualslib.com manuals search engine

4.2.6 Removing the Carriage Unit

1. Remove the Front Cover.
   See Step 1 to Step 2 in Section 4.2.4
2. Move the Carriage Unit to the centre.
   See Step 2 in Section 4.2.5
3. Remove the 5 mm hex nut that secures the Carriage Shaft.
4. Remove the C.B.P. M3 x 10 screw that secures the Ground Plate B and remove it from the Carriage Shaft.

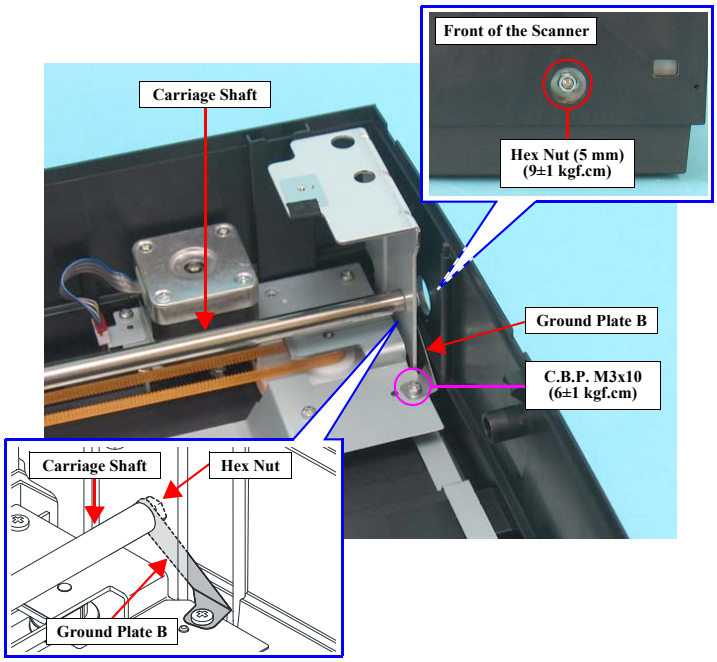


Figure 4-23. Removing the Carriage Shaft (1)

5. Rotate the Carriage Shaft with a wrench or similar tool so that the edge of the shaft can come out from the bushing.

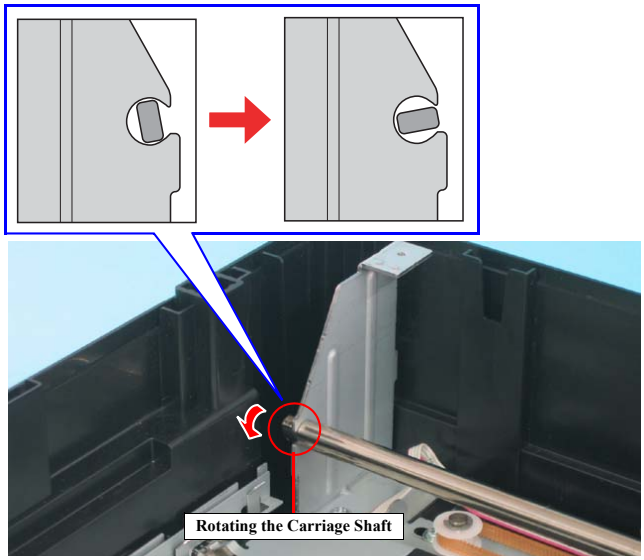


Figure 4-24. Removing the Carriage Shaft (2)

Downloaded from www.Manualslib.com manuals search engine

6. While lifting the Carriage Unit as shown in Figure 4-25, remove the rear of the Carriage Shaft from the notch, and pull the front of the Shaft out of the bushing in the Base Frame.
7. Pull the Carriage Shaft out of the Carriage Unit.

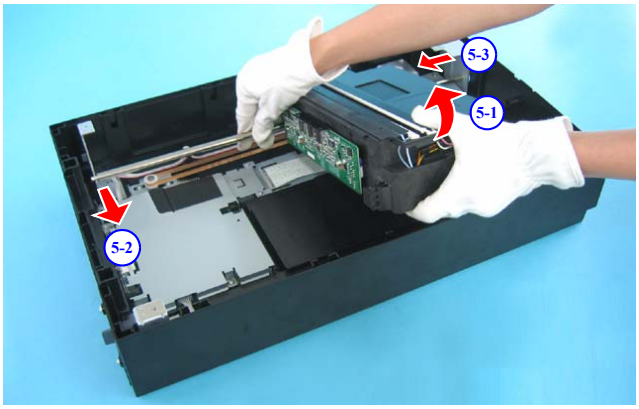


Figure 4-25. Removing the Carriage Shaft (3)

8. Lift the Carriage Unit, remove the Lock Plate and then remove the CR Drive Belt.

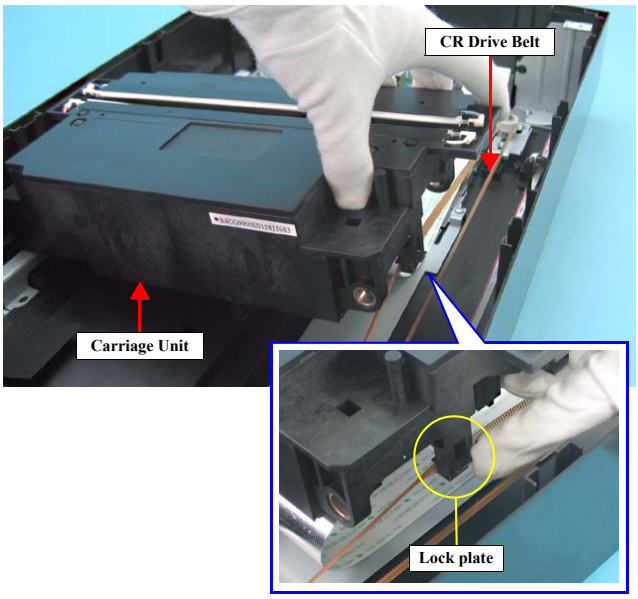


Figure 4-26. Removing the CR Drive Belt

9. Disconnect the Carriage FFC CN5 from the Main Board and remove the Carriage Unit. See Step 7 in Section 4.2.5

REASSEMBLY

- Install the Carriage FFC with reference to Figure 4-20 on page 46.
- Install the Ground Plate B as shown in Figure 4-23 on page 48.

Downloaded from www.Manualslib.com manuals search engine

4.2.7 Removing the CR Motor

1. Remove the Carriage Unit. See Section 4.2.6 on page 48.
2. Disconnect the CR Motor Connector from the CR Motor Relay Connector.
3. Remove the C.B.P. M3 x 10 screw and C.B.P. M3 x 8 screw that secure the FFC Cover and remove the FFC Cover.
4. Remove the C.P.F.P. M3 x 8 screw that secures the Harness B Cover and remove the Harness B Cover.
5. Remove the two C.B.P. M3 x 10 screws, C.B.P. M3 x 10 screw and C.P.F.P. M3 x 8 screw that secure the Motor Harness Cover.
6. Disconnect the CR Motor Relay Connector (CN9) from the Main Board and remove the Motor Harness Cover.
7. Remove the C.B.P. M3 x 10 screw that secures the CR Motor Unit.
8. Remove the CR Drive Belt from the Driven Pulley and remove the CR Motor Unit.

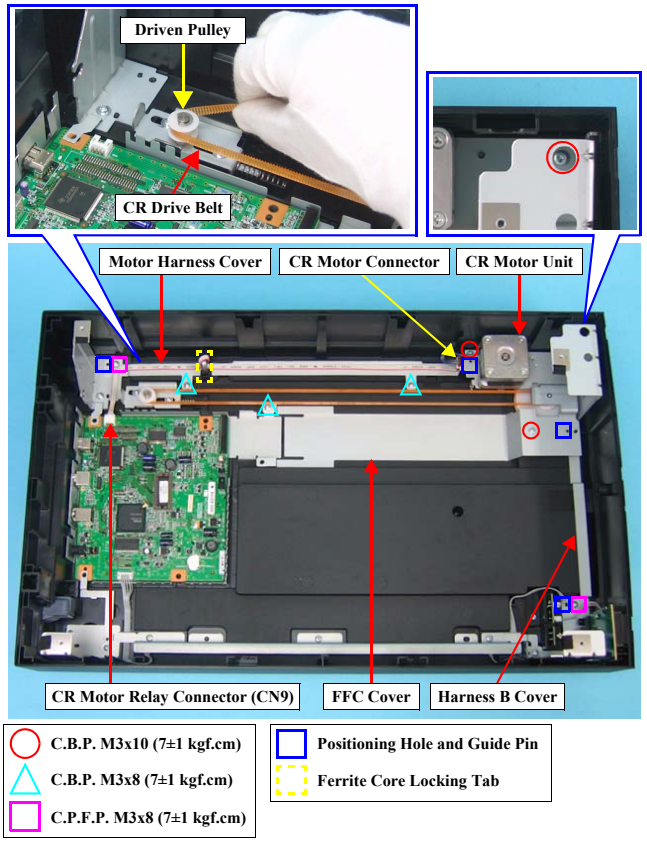


Figure 4-27. Removing the CR Motor Unit

Downloaded from www.Manualslib.com manuals search engine

9. Remove the CR Drive Belt from the CR Motor Unit following the procedure below.
   1. Release the end A of Torsion Spring 121 from the tab on the CR Motor Holder, and remove the Torsion Spring 121 from the shaft of the CR Motor Holder.
   2. Remove the C.B. M3 x 3 screws and P.W. M3 x 0.8 screws that secure the Tension Holder, then remove the Tension Holder and Pulley.
   3. Remove the CR Motor Belt, and then remove the CR Drive Belt.

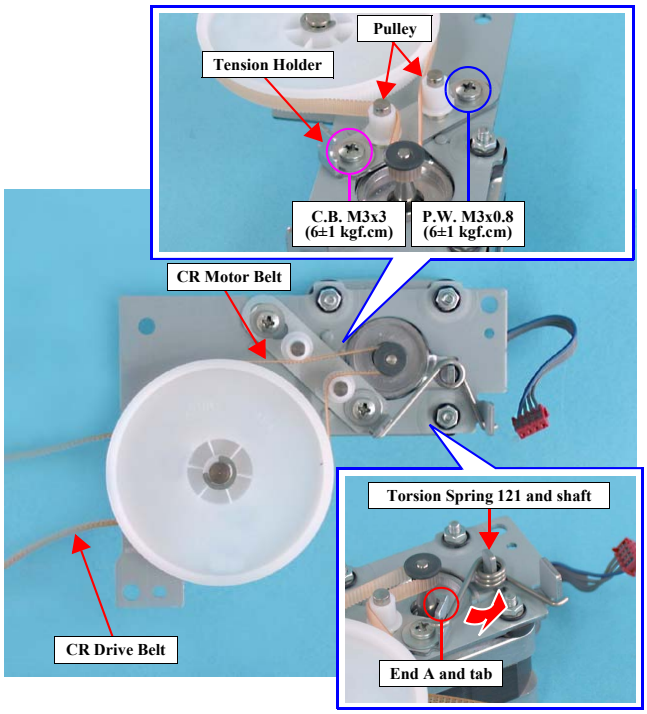


Figure 4-28. Removing the CR Drive Belt

10. Remove the E-ring that secures the Driven Pulley and remove the Driven Pulley.
11. Remove the three hex-nuts (H.N.-2, 3), then remove the CR Motor, and three Motor Insulators.

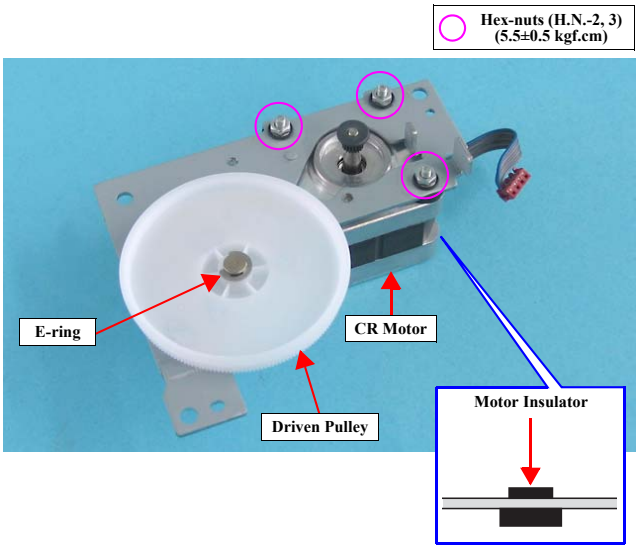


Figure 4-29. Removing the CR Motor

Downloaded from www.Manualslib.com manuals search engine

REASSEMBLY

■ Install the Tension Holder Unit and Torsion Spring 121 according to the following procedure.

1. Place the Tension Holder between the three guide pins on the CR Motor Holder, and secure the Tension Holder lightly with the screws so that it can slide.

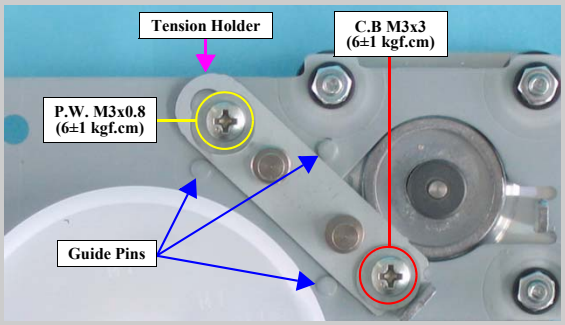


Figure 4-30. Installing the Tension Holder Unit

2. Attach the two Tension Pulleys to the shaft of the Tension Holder, and install the CR Motor Belt as shown below.

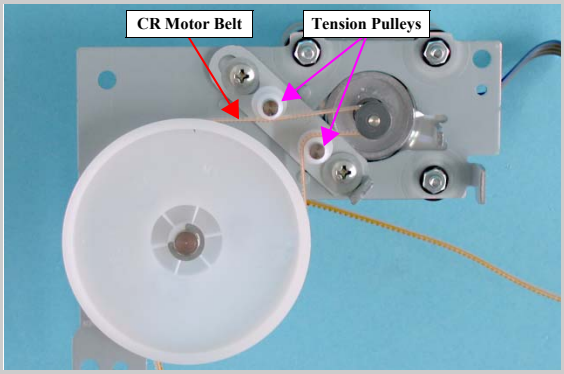


Figure 4-31. Installing the CR Motor Belt

REASSEMBLY

3. Position the two ends of Torsion Spring 98.18 against the tabs of the Tension Holder and the CR Motor Holder.

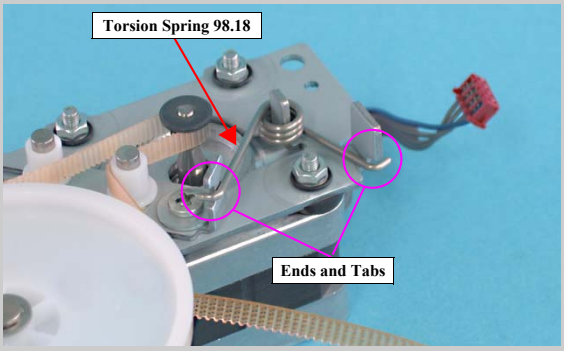


Figure 4-32. Installing the Torsion Spring 98.18

4. After checking proper tension is applied to the CR Motor Belt, secure the Tension Holder tightly with the screws.

■ When installing the following unit and parts, match the positioning holes and guide pins as shown in Figure 4-27 on page 50.

- CR Motor Unit
- Motor Harness Cover
- Harness B Cover
- FFC Cover

■ Make sure to secure the Ferrite Core attached to the Motor Harness with the Ferrite Core Locking Tab shown in Figure 4-27 on page 50.

ADJUSTMENT REQUIRED

Whenever the Tension Holder or the CR Motor Holder is replaced, G-26 grease must be applied to the specified points. See Figure 6-2 on page 70.

Downloaded from www.Manualslib.com manuals search engine

4.2.8 Removing the Driven Pulley Unit

1. Remove the CR Drive Belt from the Driven Pulley.
See Step 1 to Step 8 in Section 4.2.7
2. Remove the two C.P.F.P. M3 x 8 screws that secure the Driven Pulley Unit, and remove the Driven Pulley Unit and the Driven Pulley Spring.
3. Remove the Driven Pulley Spring from the Driven Pulley Unit.

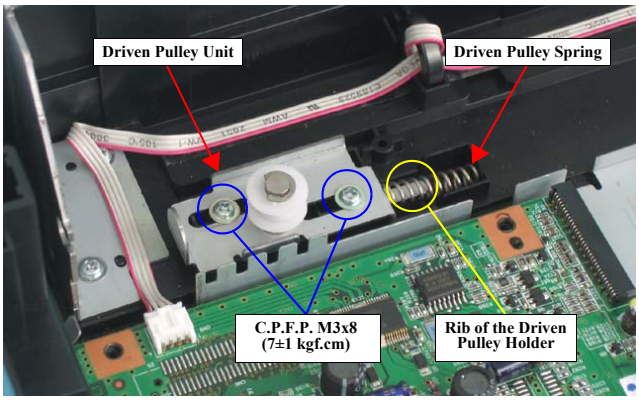


Figure 4-33. Removing the Driven Pulley Unit

4. Remove the E-ring and then remove the Driven Pulley from the Driven Pulley Unit.

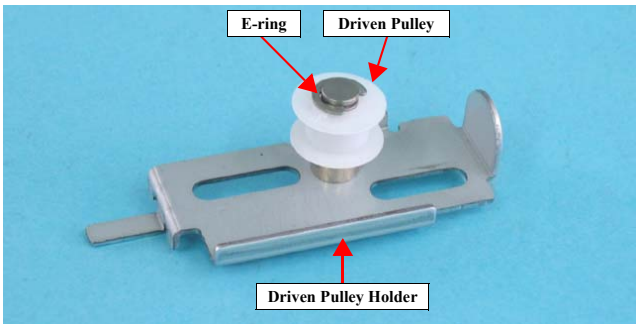


Figure 4-34. Removing the Driven Pulley

Insert the Driven Pulley Spring into the Lib of the Driven Pulley Holder.

Whenever the Driven Pulley Holder is replaced, G-26 grease must be applied to the specified points.
See Figure 6-1 on page 70.

Downloaded from www.Manualslib.com manuals search engine

4.2.9 Removing TPU Lower Housing

1. Remove the TPU Unit. See Section 4.2.1 on page 39.
2. Slide the Document Cover toward the front and pull it out from the four slots of the TPU Unit.
3. Release the TPU Carriage Lock.

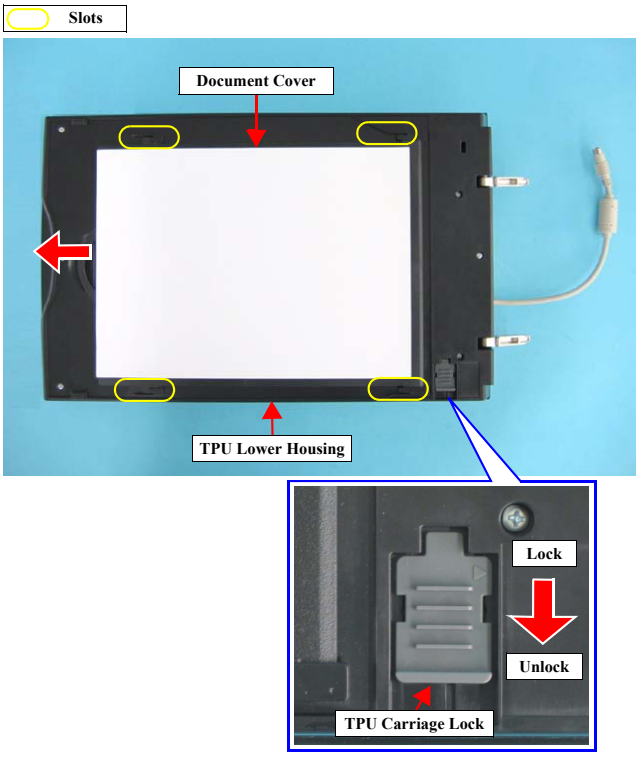


Figure 4-35. Releasing the TPU Carriage Lock

4. Remove the six C.B.P. M3 x 12 screws that secure the TPU Lower Housing.
5. Raise the hinges until they become upright.
6. Lift the TPU Lower Housing and remove it.

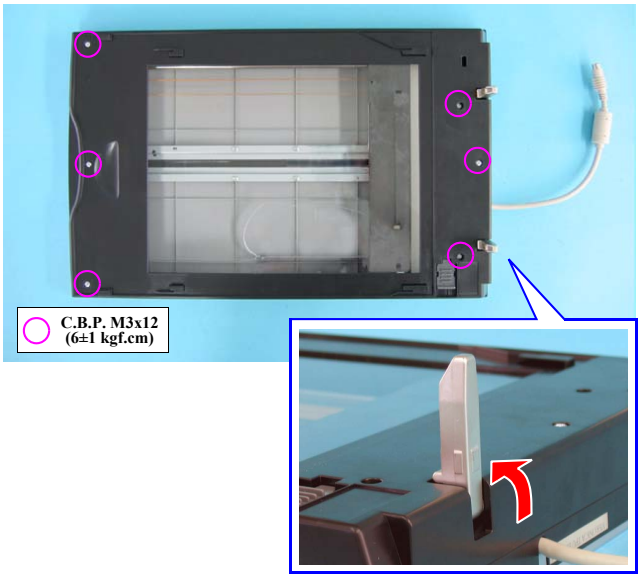


Figure 4-36. Removing the TPU Lower Housing

CAUTION

The TPU Lower Housing is not available alone but is included in the TPU Case, ASP. When you need to replace the TPU Lower Housing, you must replace the TPU Case with the TPU Case, ASP and also replace the separately supplied four TPU Dust-Resistant Sheets and other required parts. For more details, refer to Chapter7 Exploded Diagram on page 84 and Service Parts List on page 89.

Downloaded from www.Manualslib.com manuals search engine

4.2.10 Removing the TPU Carriage Unit

1. Remove the TPU Lower Housing. See Section 4.2.9 on page 54.
2. Move the TPU Carriage Unit to the centre.

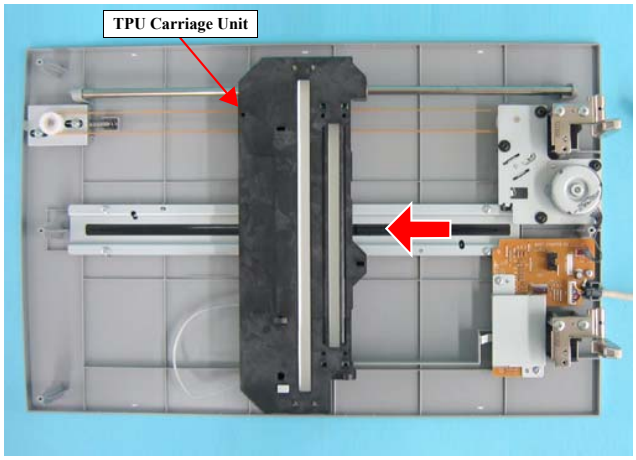


Figure 4-37. Centering the TPU Carriage Unit

3. Remove the TPU Carriage Shaft according to the following procedure.
   1. Remove the TPU Carriage Shaft from the Rear Bushing of the TPU Upper Housing.
   2. Pull the TPU Carriage Shaft out of the Front Bushing of the TPU Upper Housing.
   3. Pull the TPU Carriage Shaft out of the TPU Carriage Unit toward the rear to remove it.

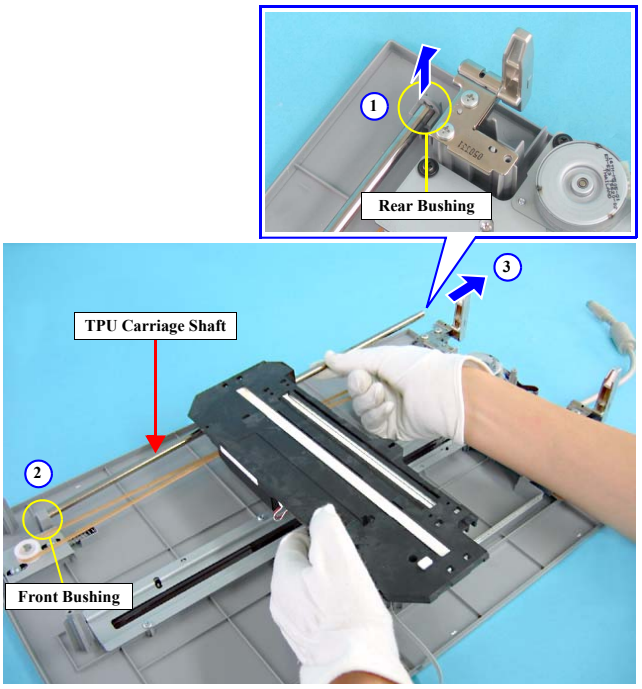


Figure 4-38. Removing the TPU Carriage Shaft

Downloaded from www.Manualslib.com manuals search engine

4. Lift the TPU Carriage Unit and remove the TPU CR Drive Belt from the retaining clip.

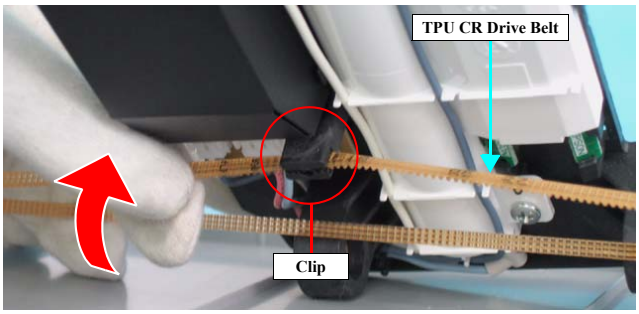


Figure 4-39. Removing the TPU CR Drive Belt

5. Remove the Lock Plate that secures the DRV-SUB_B FFC CN1, and remove the FFC from the TPU Carriage Unit.
6. Disconnect the DRV-SUB _B FFC CN1 from the SUB_B Board and remove the TPU Carriage Unit.

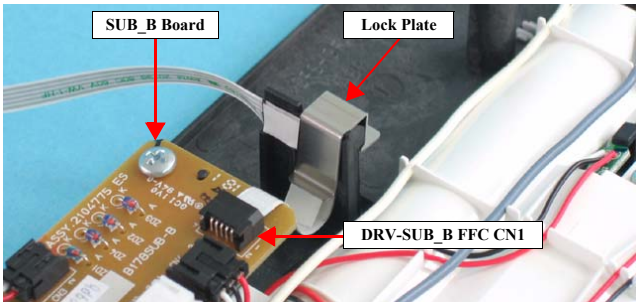


Figure 4-40. Removing the TPU Carriage Unit

REASSEMBLY

- When attaching the DRV-SUB_B FFC to the TPU Carriage Unit, align the positioning line on the FFC as shown below and secure it with two pieces of two-sided tape.

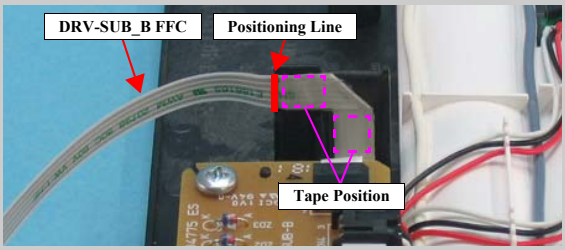


Figure 4-41. Attaching the DRV-SUB_B FFC

- Be sure to route the DRV-SUB_B FFC inside the protrusion of the TPU Carriage Unit as shown in the figure below.

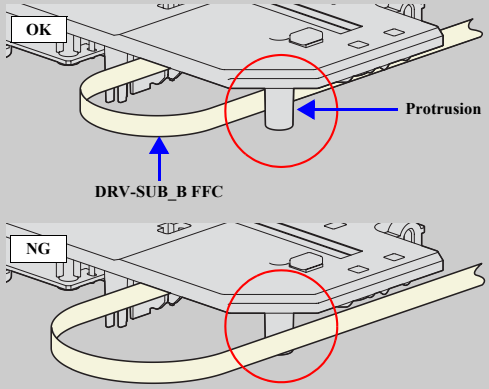


Figure 4-42. Routing the DRV-SUB_B FFC

Downloaded from www.Manualslib.com manuals search engine

4.2.11 Removing the TPU Unit Cable

1. Remove the TPU Lower Housing. See Section 4.2.9 on page 54.
2. Remove the C.B.P. M3 x 8 screw that secures the grounding wire of the TPU Unit Cable.
3. Disconnect the TPU Unit Connector CN2 from the DRV Board and remove the TPU Unit Cable.

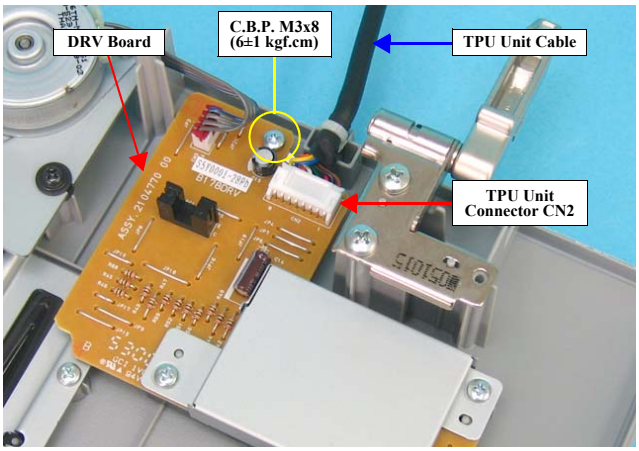


Figure 4-43. Removing the TPU Unit Cable

REASSEMBLY

Connect the TPU Unit Cable to the DRV Board following the procedure given below.

1. Connect the TPU Unit Cable to the DRV Board.
2. While slightly lifting the DRV Board, insert the grounding wire of the TPU Unit Cable between the DRV Board and TPU Upper Housing.
3. Secure the grounding wire of the TPU Unit Cable with the screw together with the DRV Board.
4. Place the TPU Unit Cable onto the notch of the TPU Upper Housing.

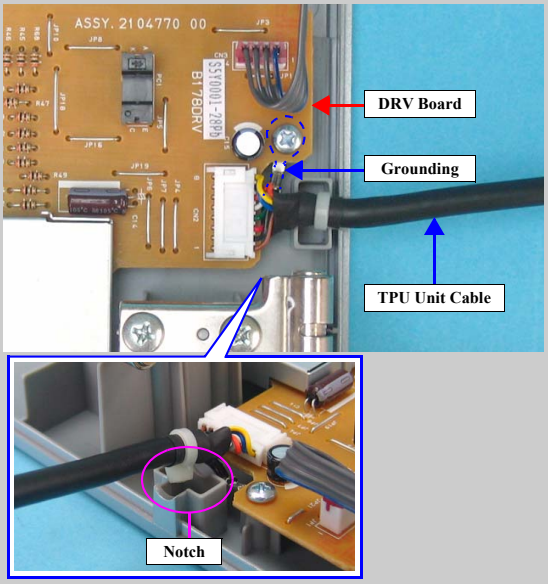


Figure 4-44. Connecting the TPU Unit Cable

Downloaded from www.Manualslib.com manuals search engine

4.2.12 Removing the SUB_B Board and TPU Inverter Board

1. Remove the TPU Carriage Unit. See Section 4.2.10 on page 55.
2. Remove the C.B.P. M3 x 8 screw that secures the LED Cover and remove it.
3. Remove the C.B.P. M3 x 8 screw that secures the SUB_B Board.

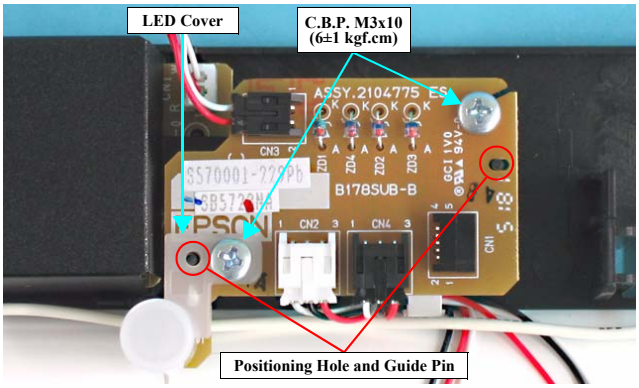


Figure 4-45. Removing the SUB_B Board (1)

4. Lift the SUB_B Board and disconnect the Connectors CN2, CN3, and CN4. Release the cables from the retaining clip on the TPU Lamp Cover, and remove the SUB_B Board.

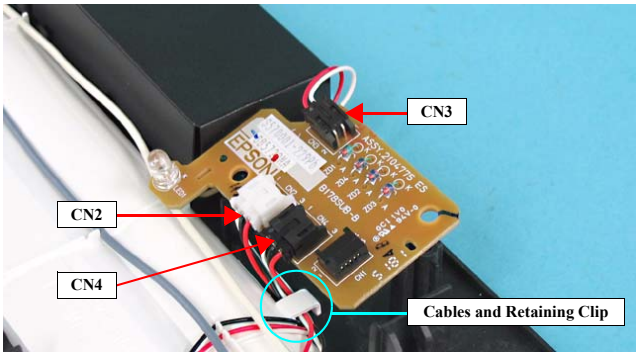


Figure 4-46. Removing the SUB_B Board (2)

5. Remove the two C.B.P. M3 x 6 screws that secure the TPU Inverter Board Unit.
6. Disconnect the Connectors CN1, CN2, and CN3 from the TPU Inverter Board and remove the TPU Inverter Board Unit.

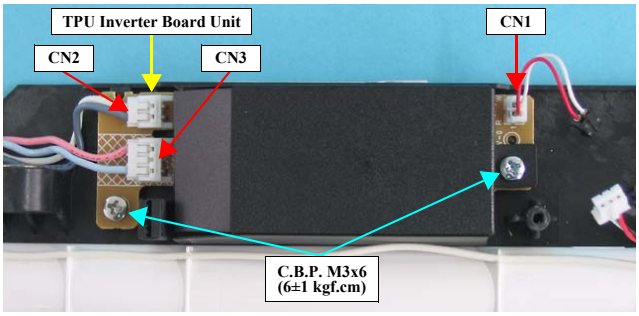


Figure 4-47. Removing the TPU Inverter Board (1)

Downloaded from www.Manualslib.com manuals search engine

7. Release the five tabs that secure the Protective Sheet and remove the TPU Inverter Board.

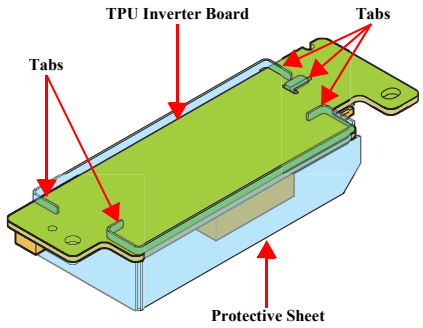


Figure 4-48. Removing the TPU Inverter Board (2)

REASSEMBLY

- Refer to Figure 4-45 when attaching the Protective Sheet to the TPU Inverter Board.
- When installing the SUB_B Board, match the positioning holes and the guide pins as shown in Figure 4-45.
- When installing the LED Cover to the SUB_B Board, match the positioning holes and the guide pins as shown in Figure 4-45.

4.2.13 Removing the SUB_C Board, SUB_D Board and Lamps

1. Remove the TPU Inverter Board. See Section 4.2.12 on page 58.
2. Remove the TPU Lamp Cover using the following procedure.
   1. Release all cables from their retaining tabs shown in the figure below.
   2. Remove the two C.B.P. M3 x 6 screws that secure the TPU Lamp Cover to remove it.

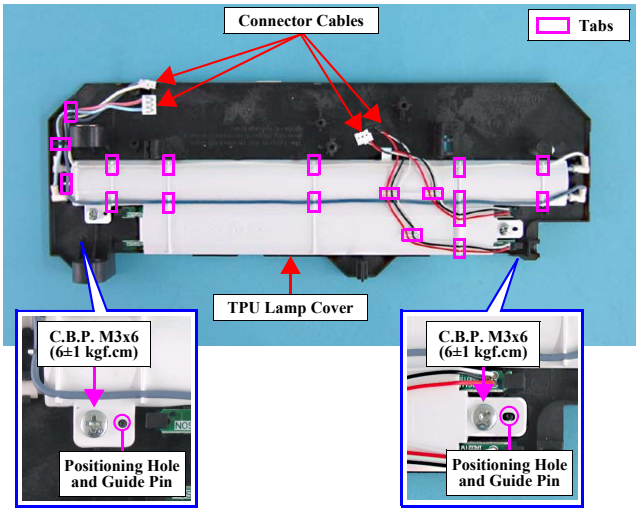


Figure 4-49. Removing the TPU Lamp Cover

Downloaded from www.Manualslib.com manuals search engine

3. Slide and remove the SUB_C Board and the SUB_D Board in the direction of the arrows.

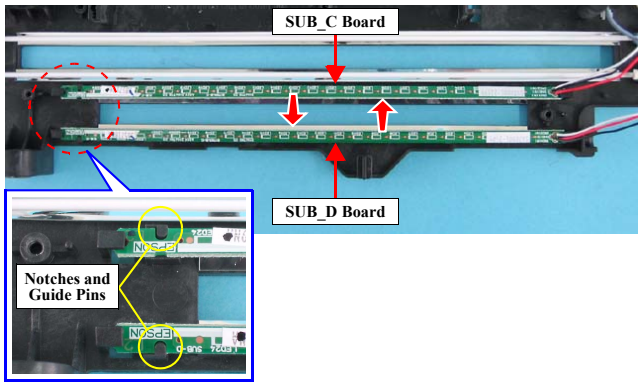


Figure 4-50. Removing the SUB_C Board and SUB_D Board

4. Release the two Lamps from the retaining clips and remove the two Lamps at the same time.

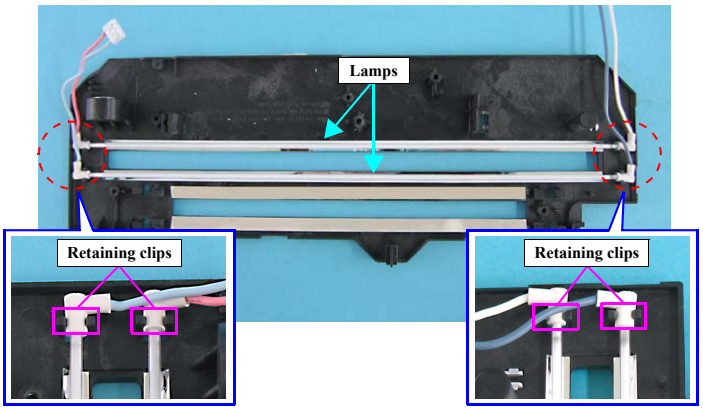


Figure 4-51. Removing the Lamps

REASSEMBLY

- When installing the SUB_C Board and SUB_D Board, match the notches and guide pins as shown in Figure 4-50.
- When installing the TPU Lamp Cover, match the positioning holes and the guide pins as shown in Figure 4-49 on page 59.
- Route the Lamp, SUB_C and SUB_D Board cables as shown in the figure below.

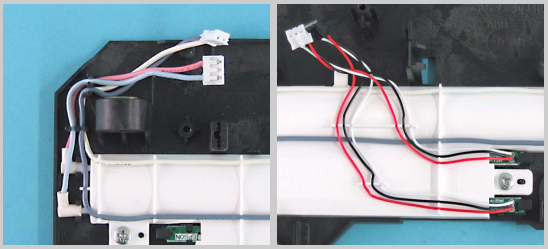


Figure 4-52. Routing the Connector Cables

Downloaded from www.Manualslib.com manuals search engine

4.2.14 Removing the DRV Board

1. Move the TPU Carriage Unit to the centre.
See Section 4.2.10 on page 55.
2. Remove the TPU Unit Cable. See Section 4.2.11 on page 57.
3. Remove the two C.B.P. M3 x 8 screws that secure the DRV Board Cover and remove it.

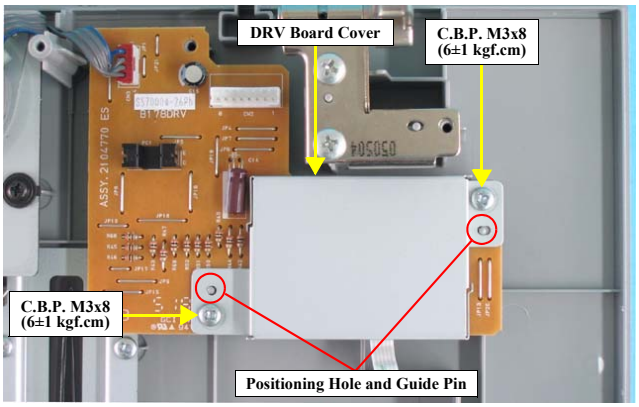


Figure 4-53. Removing the DRV Board Cover

4. Disconnect the TPU Motor cable from connector CN3, and the DRV-SUB_B FFC from CN4 on the DRV Board, and remove the DRV Board.

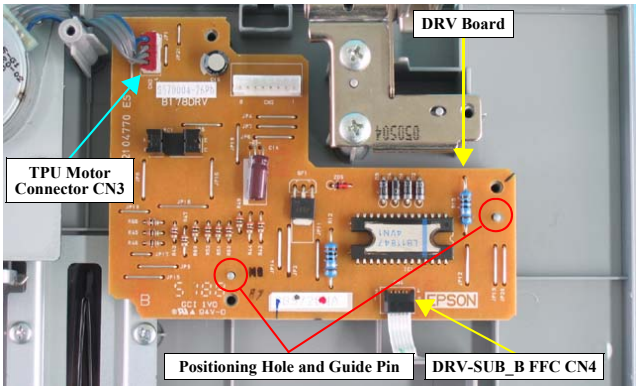


Figure 4-54. Removing the DRV Board

REASSEMBLY

- When installing the DRV Board, match the positioning holes and the guide pins as shown in Figure 4-54.
- When installing the DRV Board Cover, match the positioning holes and the guide pins as shown in Figure 4-53.

Downloaded from www.Manualslib.com manuals search engine

4.2.15 Removing the Hinges

1. Remove the TPU Lower Housing. See Section 4.2.9 on page 54.
2. Remove the four C.B.P. M4 x 12 screws that secure the Right and Left Hinges and remove them.

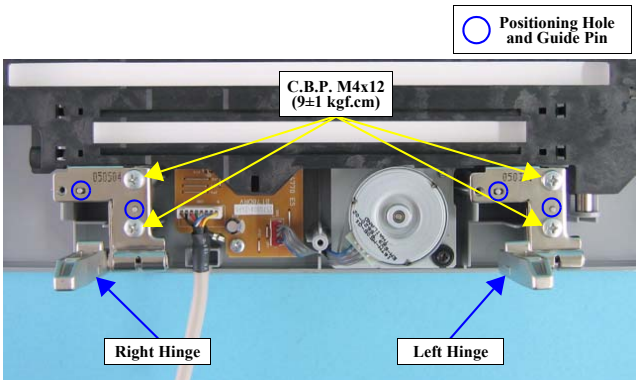


Figure 4-55. Removing the Hinges

REASSEMBLY

When installing the Hinges, match the positioning holes and the guide pins as shown in Figure 4-55.

Downloaded from www.Manualslib.com manuals search engine

4.2.16 Removing the TPU CR Motor

1. Remove the TPU Carriage Unit from the TPU Drive Belt. See Section 4.2.10 on page 55.
2. Disconnect the TPU CR Motor cable from CN3 on the DRV Board.
3. Remove the four C.C.P. M3 x 8 screws that secure the TPU CR Motor Unit and remove it from the TPU Upper Housing.

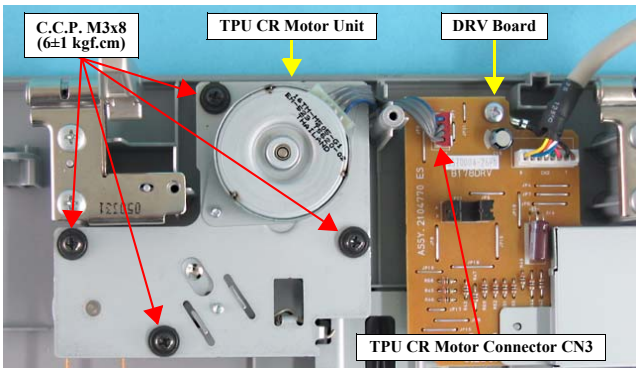


Figure 4-56. Removing the TPU CR Motor Unit (1)

4. Remove the TPU CR Drive Belt from the TPU Driven Pulley and remove the TPU CR Motor Unit.

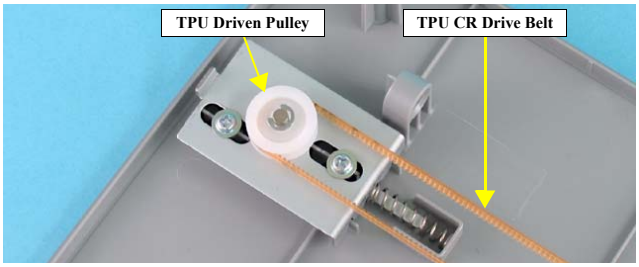


Figure 4-57. Removing the TPU CR Motor Unit (2)

5. Remove the four TPU CR Motor Dampers.

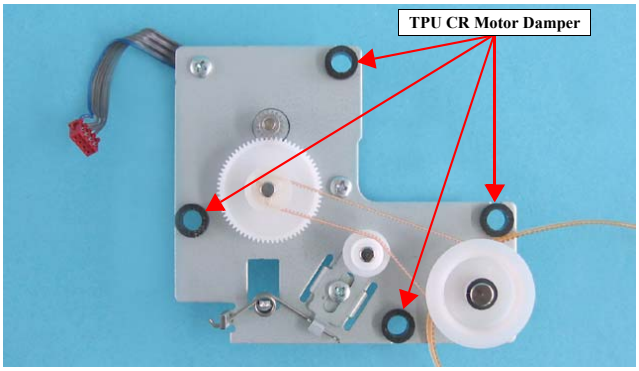


Figure 4-58. Removing the TPU CR Motor Dampers

6. Push end A of Torsion Spring 49.9 in the direction of the arrow to release it from the tab of the TPU Tension Holder Unit.
7. Remove Torsion Spring 49.9 from the shaft of the TPU CR Motor Holder.

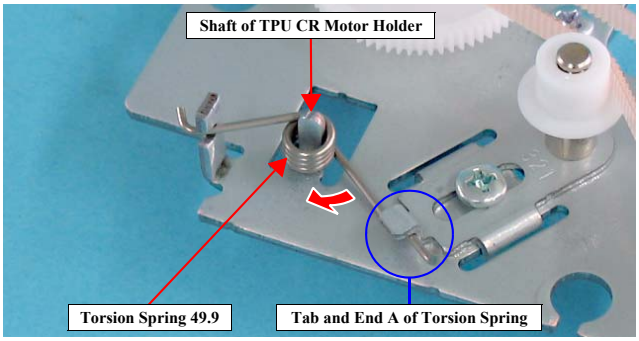


Figure 4-59. Removing Torsion Spring 49.9

Downloaded from www.Manualslib.com manuals search engine

8. Remove the C.B.S. M3 x 5 screw that secures the TPU Tension Holder, then remove the Pulley and the TPU Tension Holder.
9. Remove the Flange, then remove the TPU CR Motor Belt and the TPU CR Drive Belt in that order.

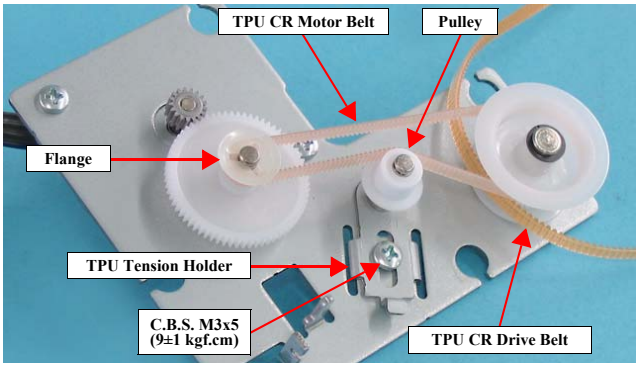


Figure 4-60. Removing the TPU CR Drive Belt

10. Remove the Idle Pulley.
11. Remove the flat washer and the Drive Pulley.
12. Remove the two C.B.S. M3 x 5 screws that secure the TPU CR Motor and remove it.

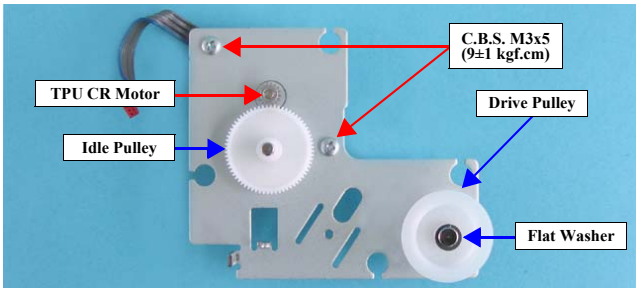


Figure 4-61. Removing the TPU CR Motor

REASSEMBLY

■ Install the TPU Tension Holder Unit and Torsion Spring 49.9 according to the following procedure.

1. Secure the TPU Tension Holder Unit loosely to the TPU CR Motor Unit with the C.B.S. M3 x 5 screw so that the Holder can slide on the Unit.
2. After mounting Torsion Spring 49.9 on the shaft of the TPU CR Motor Holder, position end B of the Torsion Spring against the notch.
3. Position end A of Torsion Spring 49.9 against the tab of the TPU Tension Holder Unit.
4. Check that the TPU CR Motor Belt is pulled taut, then tighten the screw to secure the Tension Holder in place.

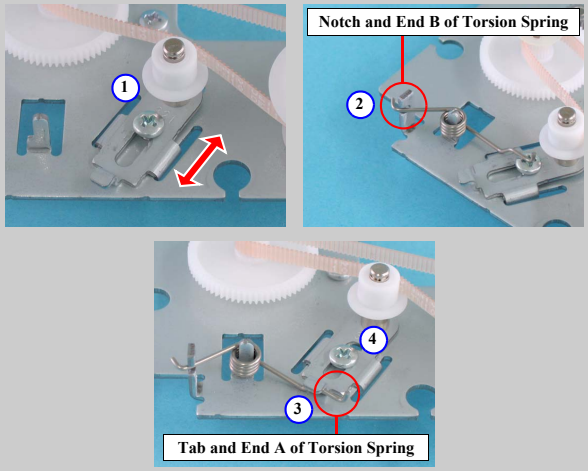


Figure 4-62. Installing the TPU Tension Holder Unit and Torsion Spring 49.9

Downloaded from www.Manualslib.com manuals search engine

REASSEMBLY

- Install the four TPU CR Motor Dampers as shown in the figure below.

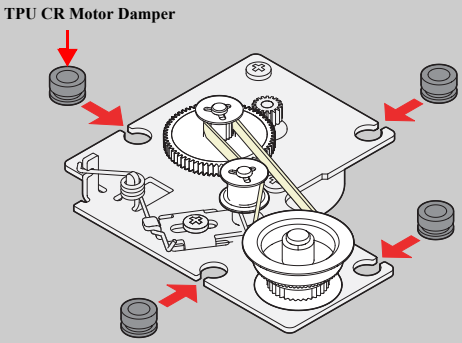


Figure 4-63. Installing the TPU CR Motor Dampers

- Route the TPU CR Motor Cable through the notch as shown in the figure below.

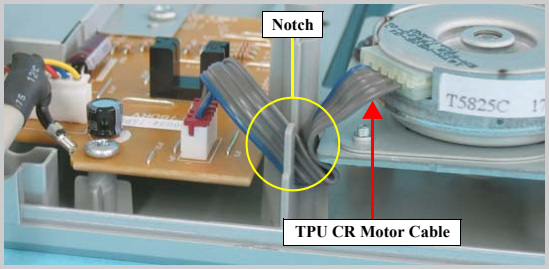


Figure 4-64. Routing the TPU CR Motor Cable

ADJUSTMENT REQUIRED

Whenever the TPU Tension Holder or the TPU CR Motor Holder is replaced, G-26 grease must be applied to the specified points. See Figure 6-4 on page 70.

4.2.17 Removing Compression Spring 3.15

1. Remove the TPU CR Motor Unit. See Section 4.2.16 on page 63.

CAUTION

When performing the next step, watch out for Compression Spring 3.15 as it may pop up.

2. Remove the two C.P.F.P. M3 x 8 screws that secure the TPU Driven Pulley Unit, and remove the unit together with the Compression Spring 3.15.
3. Remove the Compression Spring 3.15 from the TPU Driven Pulley Unit.
4. Remove the E-ring and then remove the Driven Pulley from the Driven Pulley Unit

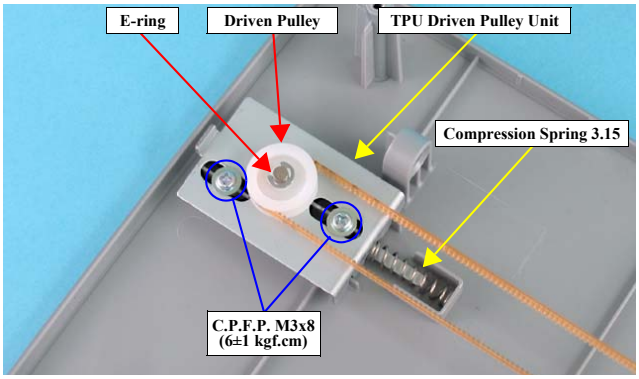


Figure 4-65. Removing Compression Spring 3.15

Downloaded from www.Manualslib.com manuals search engine

CHAPTER

5

ADJUSTMENT

Downloaded from www.Manualslib.com manuals search engine

5.1 No Special Adjustments

This product does not require any adjustment in the range of the disassembly and reassembly beyond what is explained in Chapter 4.

Downloaded from www.Manualslib.com manuals search engine

CHAPTER

6

MAINTENANCE

Downloaded from www.Manualslib.com manuals search engine

6.1 Overview

This chapter explains the maintenance necessary to keep this product in good working condition and to help prevent malfunctions.

6.1.1 Cleaning

Clean the outside of the product with a neutral detergent. Clean the interior with a vacuum cleaner. Special care must be taken when cleaning the Document Glass since it affects the image scanning quality. If it is dirty, wipe it with a clean, soft and dry cloth.

CAUTION

- Never use organic solvents, such as thinner or benzene, because they may damage the plastic and rubber parts.
- When using compressed air products; such as air duster, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.

Exterior

After wetting a clean cloth with water and then completely squeezing the water out, wipe the exterior with the document cover closed. If the exterior is extremely dirty, wipe it with a cloth moistened with a small amount of detergent.

CAUTION

When cleaning the document glass, use only pure water. Never spray water or glass cleaner directly on the unit. Moisten the cloth, and then clean the glass with the moistened cloth.

Document Glass

Clean it with a clean, dry cloth. When the Document Glass is especially dirty or has foreign matter on its surface, wipe it with a cloth moistened with a small amount of pure water. If the Document Glass has traces of wiping after cleaning, wipe it completely dry again with a dry, clean cloth.

Scanner Interior

Use a gentle vacuum cleaner to clean inside the unit. Whenever the Upper Housing has been removed, be sure to use compressed air to blow out any dust inside the unit, including the internal portion of the Upper Housing, as the last step before replacing the housing.

6.1.2 Lubrication

Lubrication is required when any part of the Scanner Carriage or TPU Carriage Unit has been replaced or the Scanner or TPU Carriage makes abnormal noise. The specified grease is indicated in Table 6-1, and the lubrication points are shown in Figure 6-1 to Figure 6-4 on the following page.

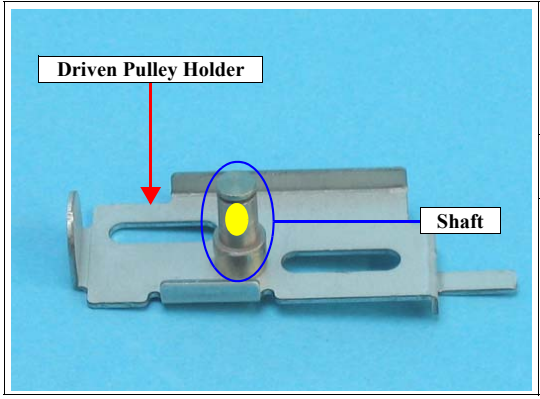
CAUTION

Failure to apply the specified amount of lubrication will contaminate the mechanisms or lead to a malfunction.

Table 6-1. Specified Grease

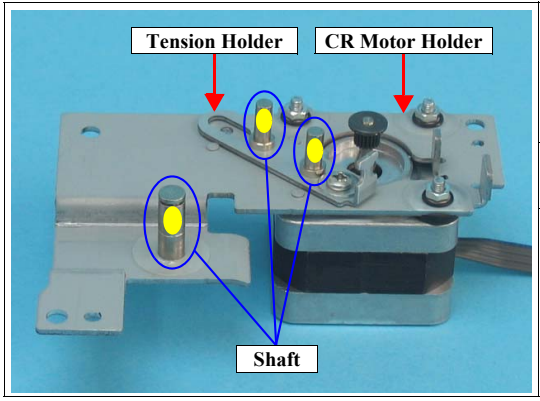
Type	Name	Epson Part Number	Supplier
Grease	G-26	1080614	Epson

Downloaded from www.Manualslib.com manuals search engine



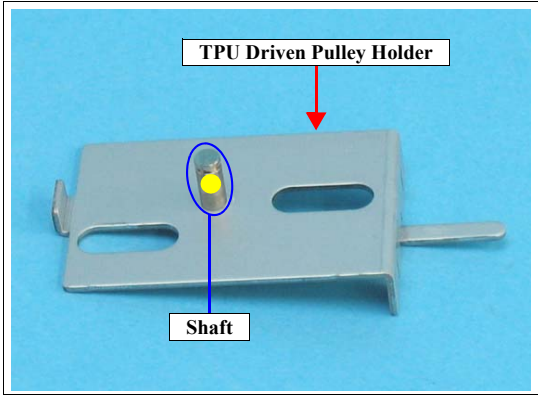
Lubrication point	Lubricant	Amount
Main (bottom) Carriage Unit Driven Pulley Holder Shaft	G-26	As shown

Figure 6-1. Lubrication Point on the Driven Pulley Holder



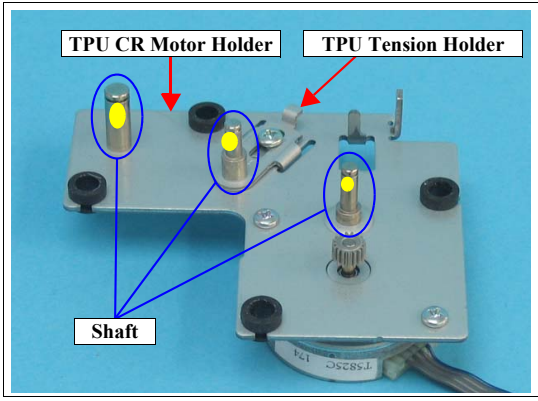
Lubrication point	Lubricant	Amount
Shaft of Tension Holder and CR Motor Holder	G-26	As shown

Figure 6-2. Lubrication Points on the Tension Holder and the CR Motor Holder



Lubrication point	Lubricant	Amount
TPU Carriage Unit Driven Pulley Holder Shaft	G-26	As shown

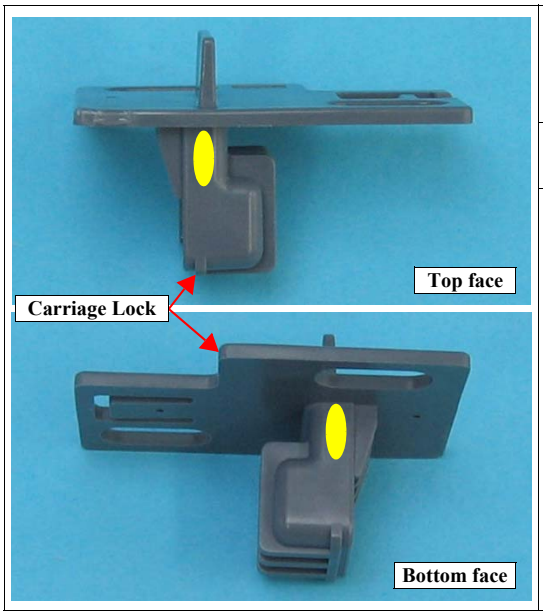
Figure 6-3. Lubrication Point on the TPU Driven Pulley Holder



Lubrication point	Lubricant	Amount
Shaft of TPU Tension Holder and TPU CR Motor Holder	G-26	As shown

Figure 6-4. Lubrication Points on the TPU Tension Holder and the TPU CR Motor Holder

Downloaded from www.Manualslib.com manuals search engine



Lubrication point
Top and bottom of Carriage Lock.

Lubricant
G-26

Amount
As shown

Figure 6-5. Lubrication Points on the Carriage Lock

Downloaded from www.Manualslib.com manuals search engine

CHAPTER

7

APPENDIX

Downloaded from www.Manualslib.com manuals search engine

7.1 Connectors

The following table indicates the connector signal wiring on the electrical circuit boards of this product.

7.1.1 Connector Configuration

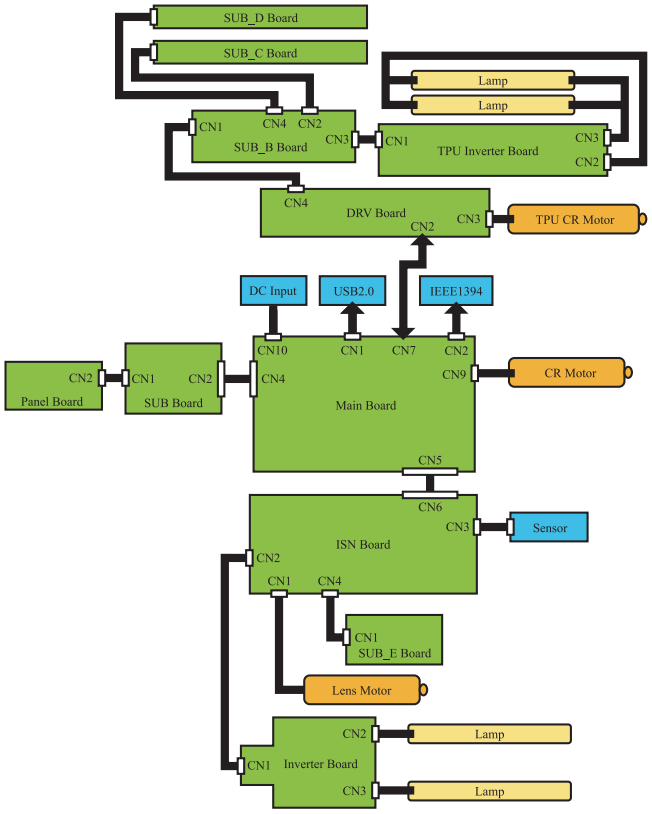


Figure 7-1. Diagram of Wiring Connectors

7.1.2 Connector Reference Table

Table 7-1. Connector Reference Table

Board	Connector	Description	Number of Pins
Main Board	CN1	USB 2.0	4
	CN2	IEEE-1394	8
	CN4	SUB Board	6
	CN5	ISN Board	34
	CN7	DRV Board	8
	CN9	CR Motor	4
	CN10	DC Input	2
SUB Board	CN1	Panel Board	4
	CN2	Main Board	6
Panel Board	CN2	SUB Board	4
ISN Board	CN1	Lens Motor	4
	CN2	Inverter Board	4
	CN3	Sensor	2
	CN4	SUB_E Board	3
	CN6	Main Board	34
Inverter Board	CN1	ISN Board	4
	CN2	Lamp x 2	2 (4)*1
	CN3		
DRV Board	CN2	Main Board	8
	CN3	TPU CR Motor	4
	CN4	SUB_B Board	5
SUB_B Board	CN1	DRV Board	5
	CN2	SUB_C Board	3
	CN3	TPU Inverter Board	2
	CN4	SUB_D Board	3
TPU Inverter Board	CN1	SUB_B Board	2
	CN2	Lamp x 2	2
	CN3		2 (3)*2
SUB_C Board	-	SUB_B Board	3
SUB_D Board	-	SUB_B Board	3
SUB_E Board	CN1	ISN Board	3

Note *1: Using two of the four pins.
*2: Using two of the three pins.

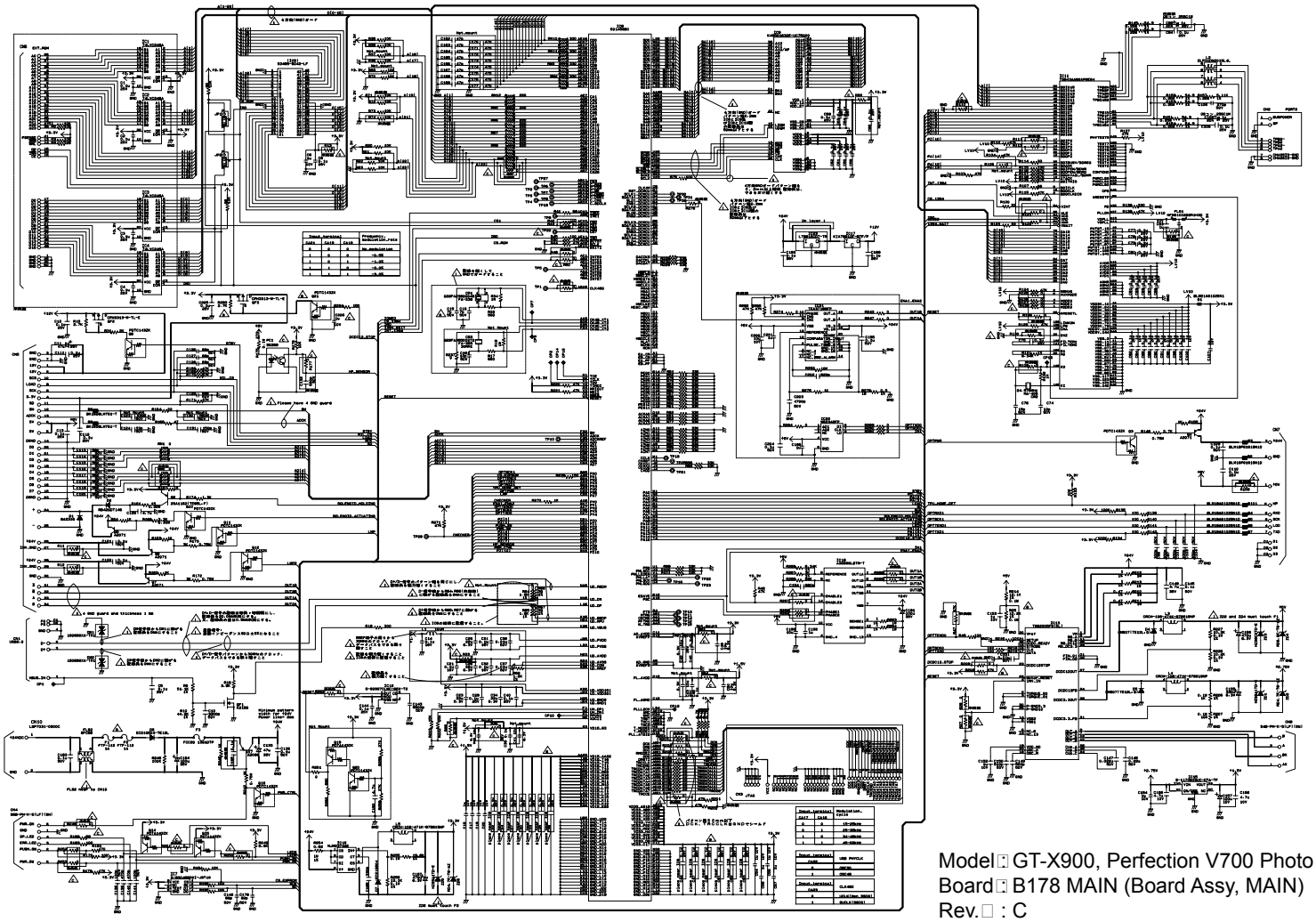
Downloaded from www.Manualslib.com manuals search engine

7.2 Circuit Diagrams

The control electrical circuit diagrams of this product are shown on the pages that follow.

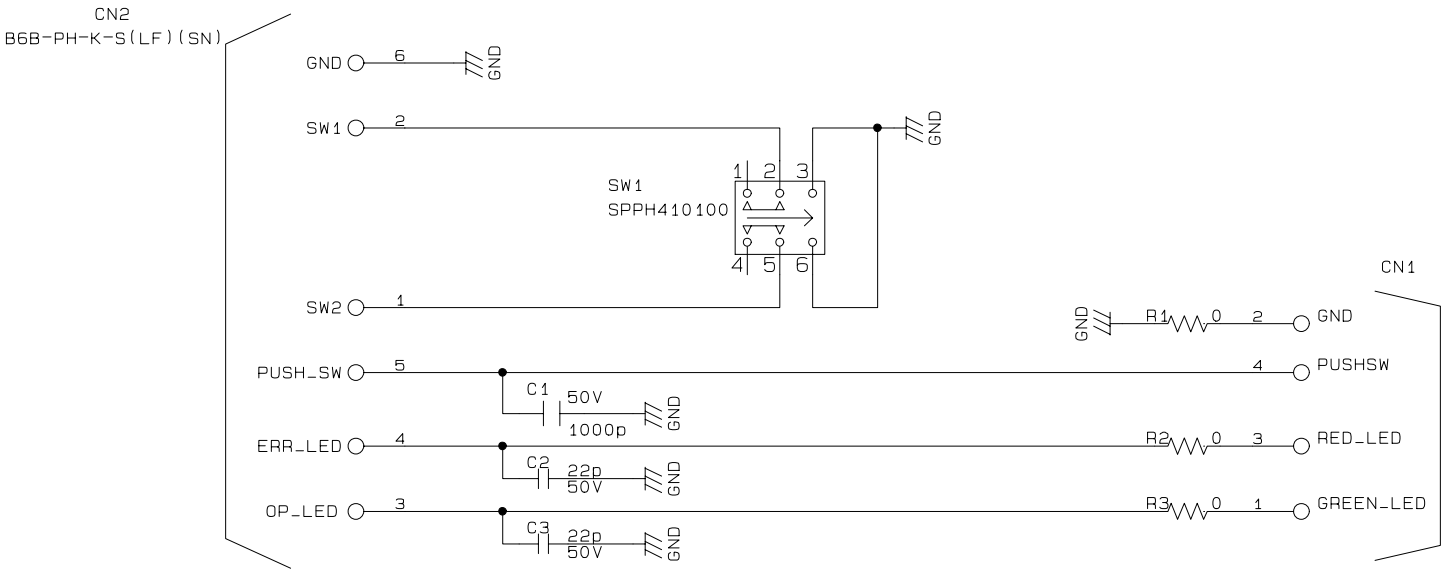
Main Board:	**B178 MAIN (Board Assy, Main)**
SUB Board:	**B178 SUB (Board Assy, SUB)**
Panel Board:	**B178 PNL**
ISN Board:	**B178 ISN (Board Assy, ISN)**
DRV Board:	**B178 DRV (Board Assy, DRV)**
SUB_B Board:	**B178 SUB-B (Board Assy, SUB-B)**
SUB_C Board:	**B178 SUB-C (Board Assy, SUB-C)**
SUB_D Board:	**B178 SUB-D (Board Assy, SUB-D)**
SUB_E Board:	**B178 SUB-E (Board Assy, SUB-E)**

Downloaded from www.Manualslib.com manuals search engine



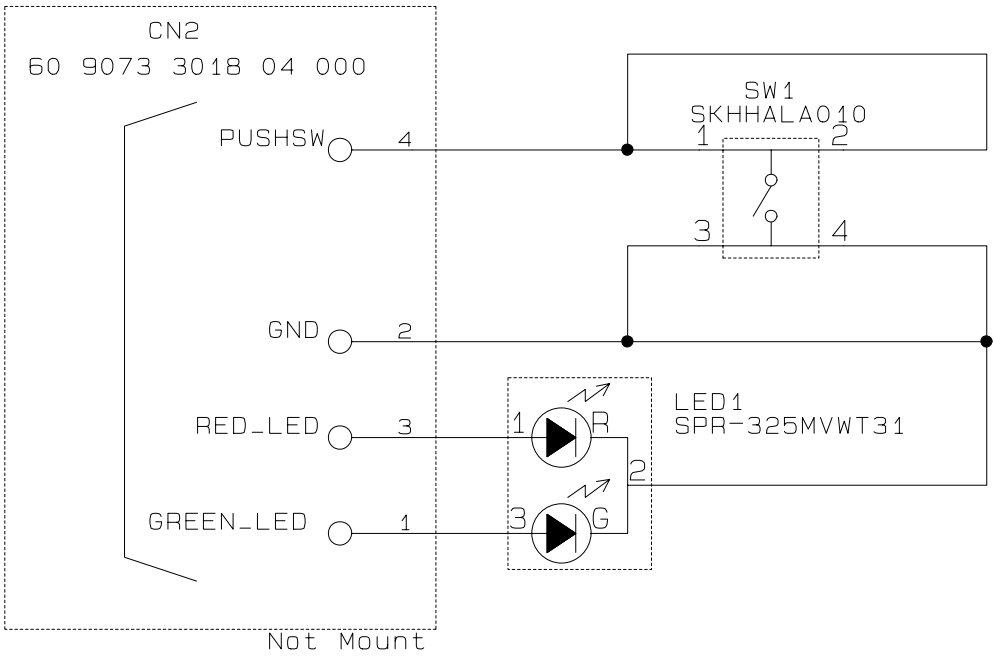
Model : GT-X900, Perfection V700 Photo
Board : B178 MAIN (Board Assy, MAIN)
Rev. : C
Sheet : 1/1

Downloaded from www.Manualslib.com manuals search engine



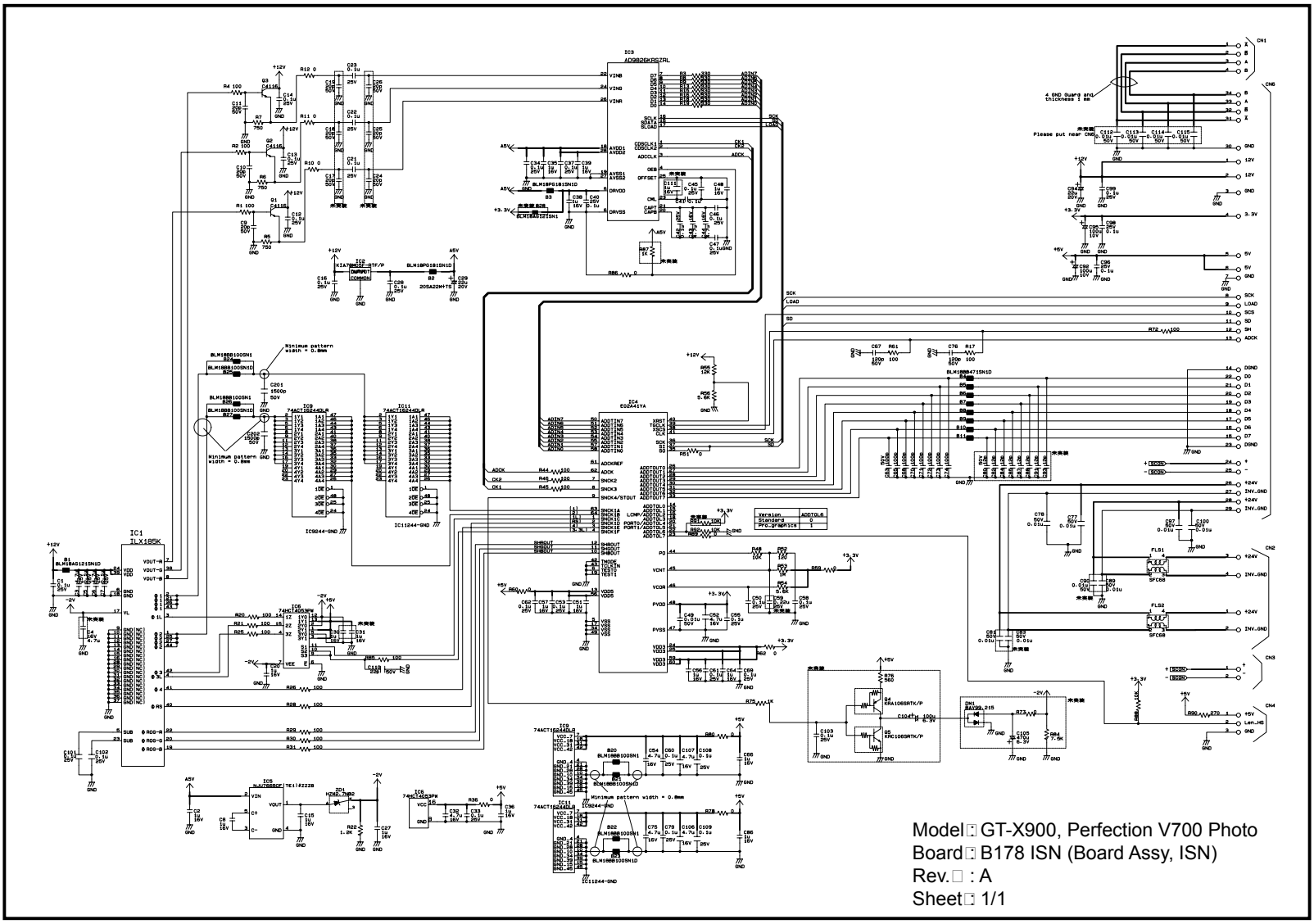
Model : GT-X900, Perfection V700 Photo
Board : B178 SUB (Board Assy, SUB)
Rev. : A
Sheet : 1/1

Downloaded from www.Manualslib.com manuals search engine



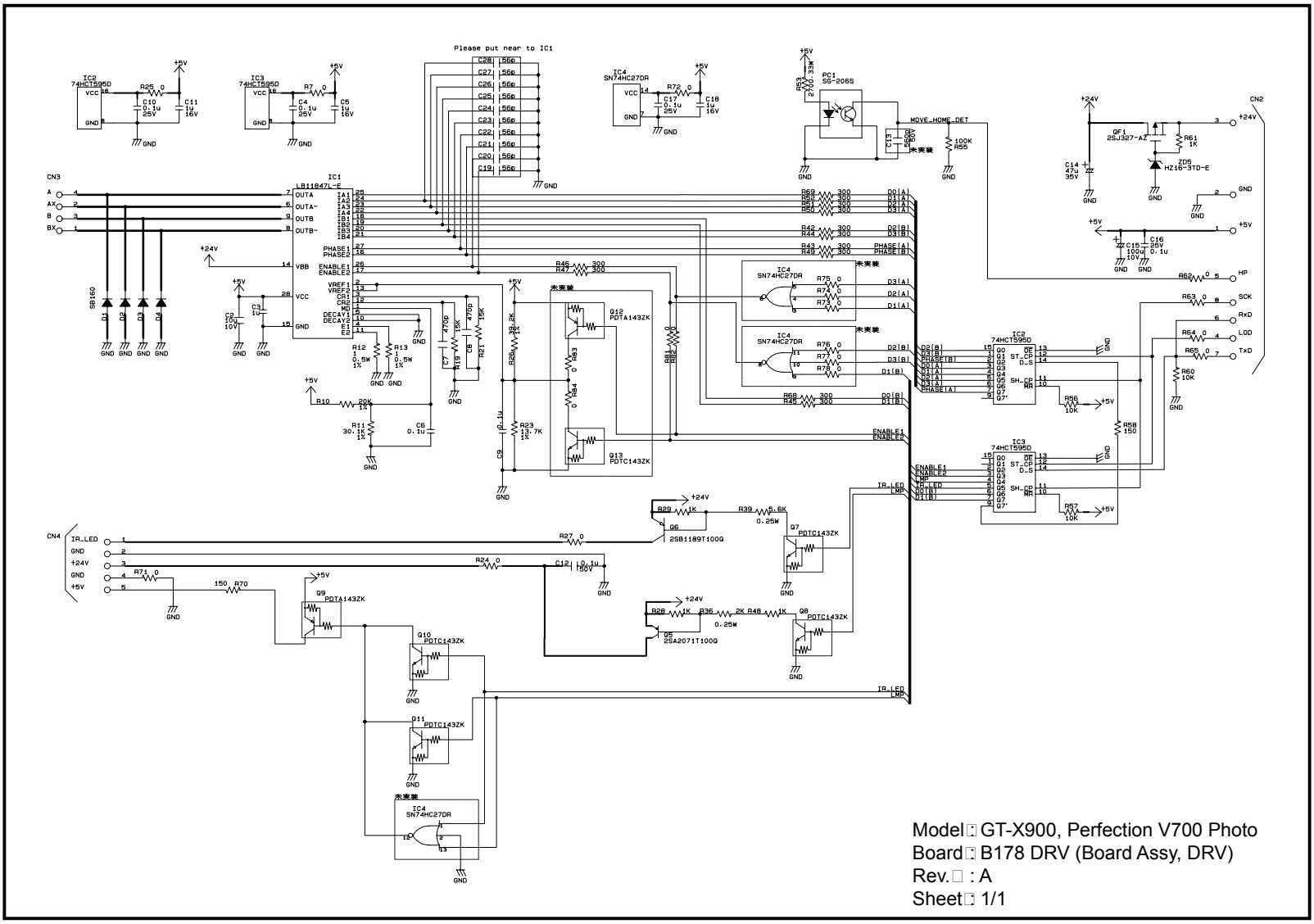
Model: GT-X900, Perfection V700 Photo
Board: B178 PNL (Board Assy, PNL)
Rev. : A
Sheet: 1/1

Downloaded from www.Manualslib.com manuals search engine



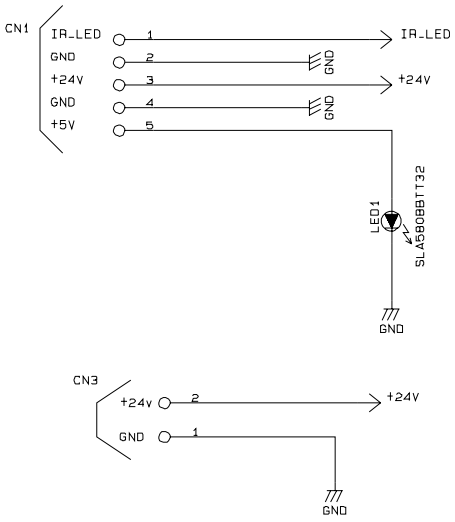
Model: GT-X900, Perfection V700 Photo
Board: B178 ISN (Board Assy, ISN)
Rev. : A
Sheet: 1/1

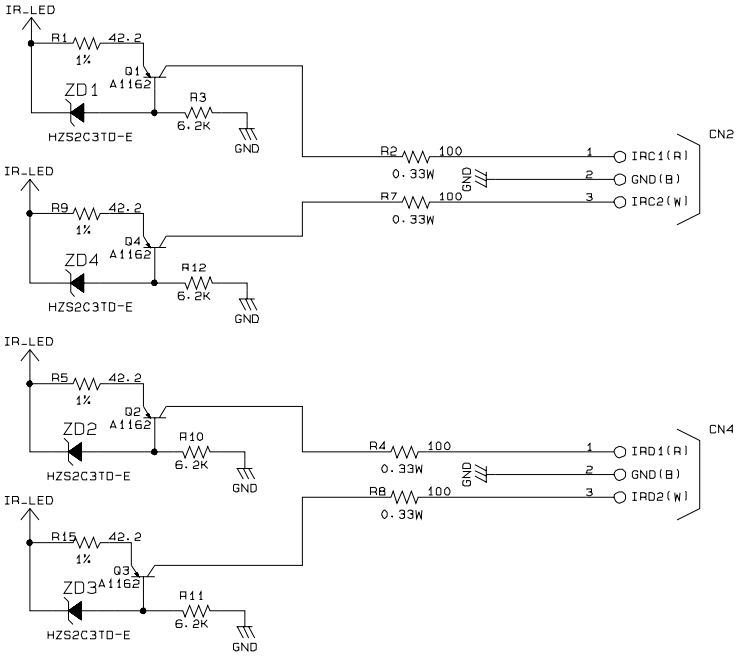
Downloaded from www.Manualslib.com manuals search engine



Model: GT-X900, Perfection V700 Photo
Board: B178 DRV (Board Assy, DRV)
Rev. : A
Sheet: 1/1

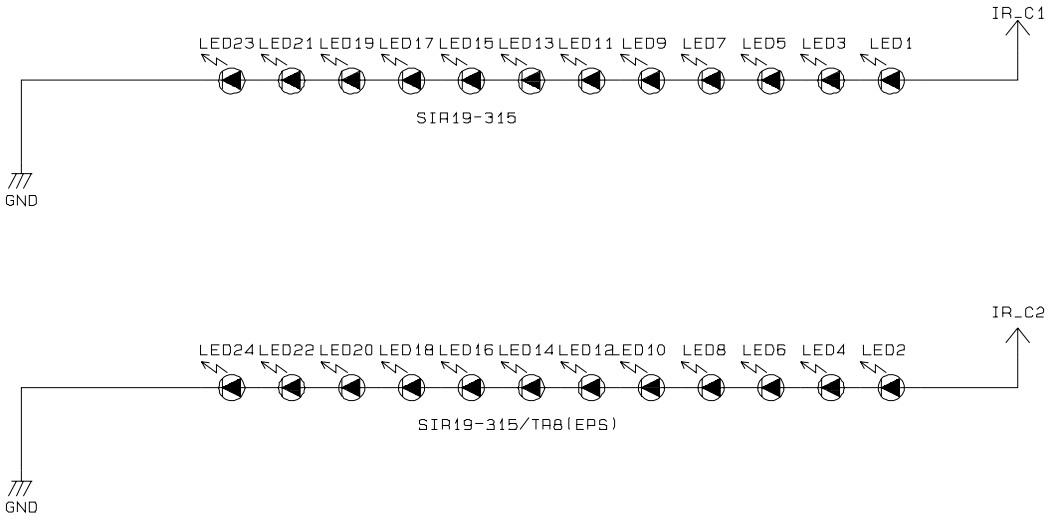
Downloaded from www.Manualslib.com manuals search engine

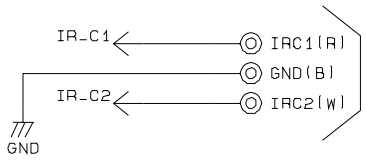




Model: GT-X900, Perfection V700 Photo
Board: B178 SUB-B (Board Assy, SUB-B)
Rev.: A
Sheet: 1/1

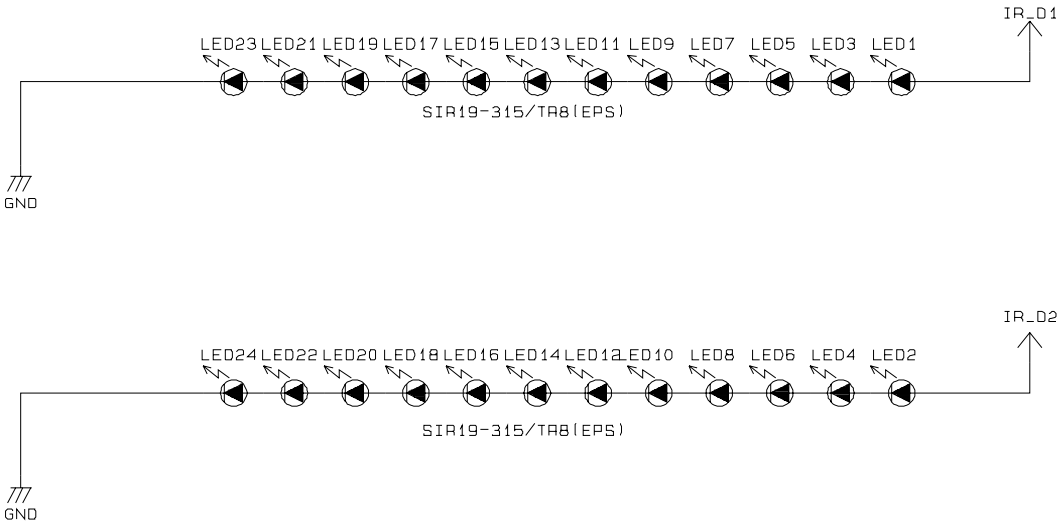
Downloaded from www.Manualslib.com manuals search engine

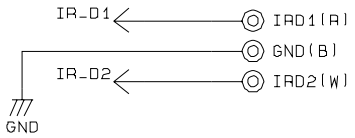




Model: GT-X900, Perfection V700 Photo
Board: B178 SUB-C (Board Assy, SUB-C)
Rev. : A
Sheet: 1/1

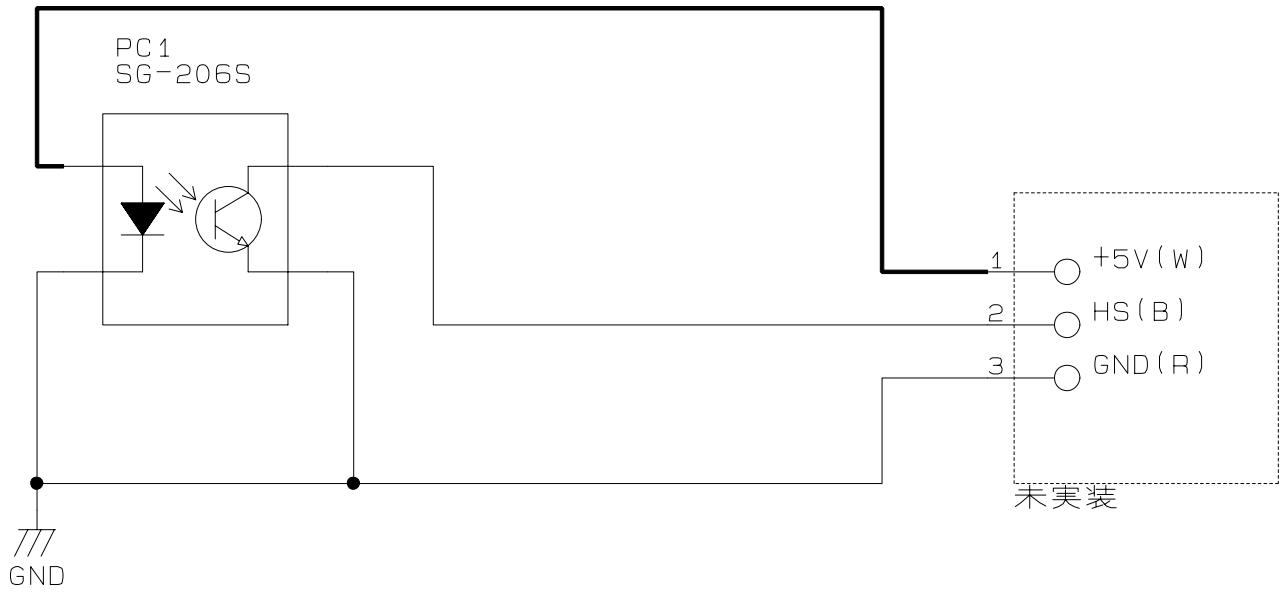
Downloaded from www.Manualslib.com manuals search engine





Model: GT-X900, Perfection V700 Photo
Board: B178 SUB-D (Board Assy, SUB-D)
Rev. : A
Sheet: 1/1

Downloaded from www.Manualslib.com manuals search engine



Model: GT-X900, Perfection V700 Photo
Board: B178 SUB-E (Board Assy, SUB-E)
Rev.: A
Sheet: 1/1

Downloaded from www.Manualslib.com manuals search engine

7.3 Exploded Diagram

The following exploded diagrams are provided below.

Downloaded from www.Manualslib.com manuals search engine

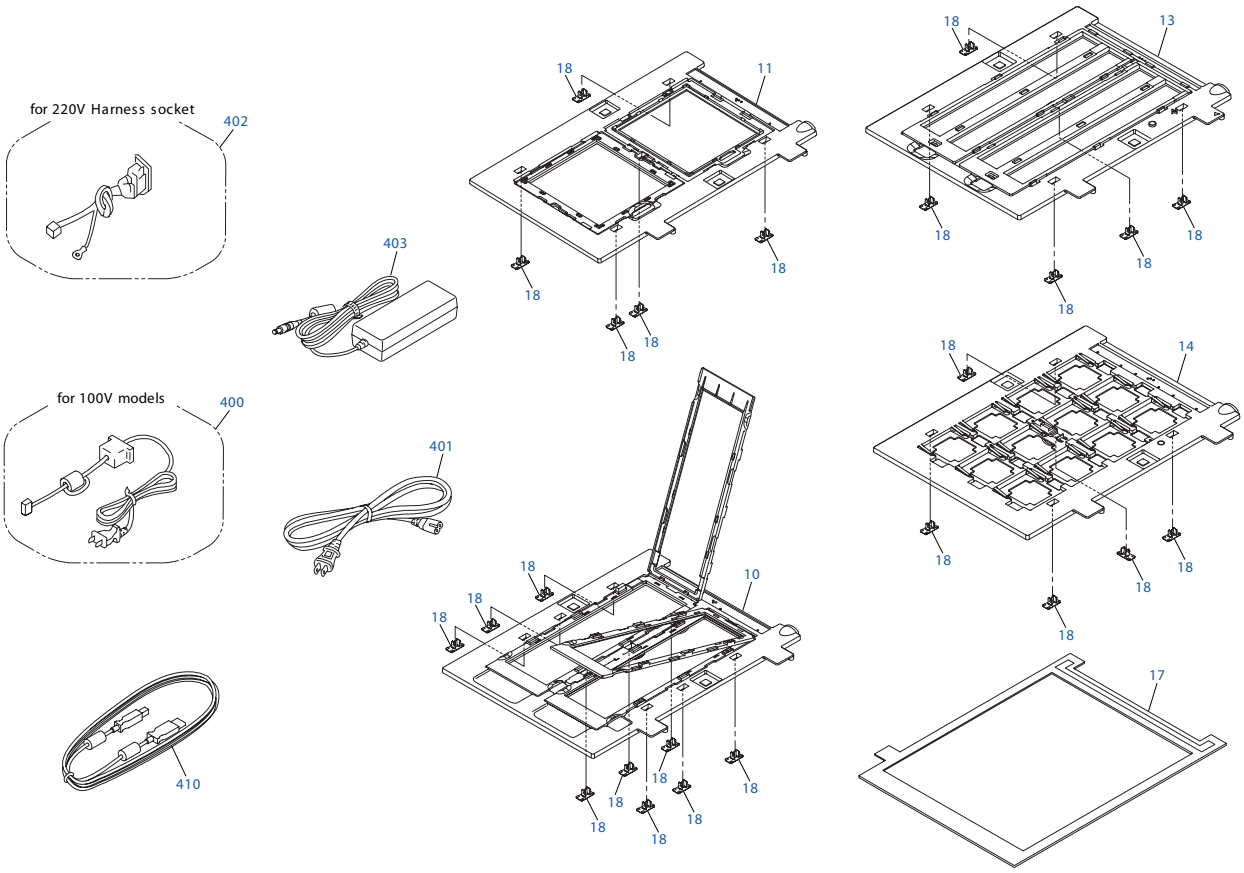
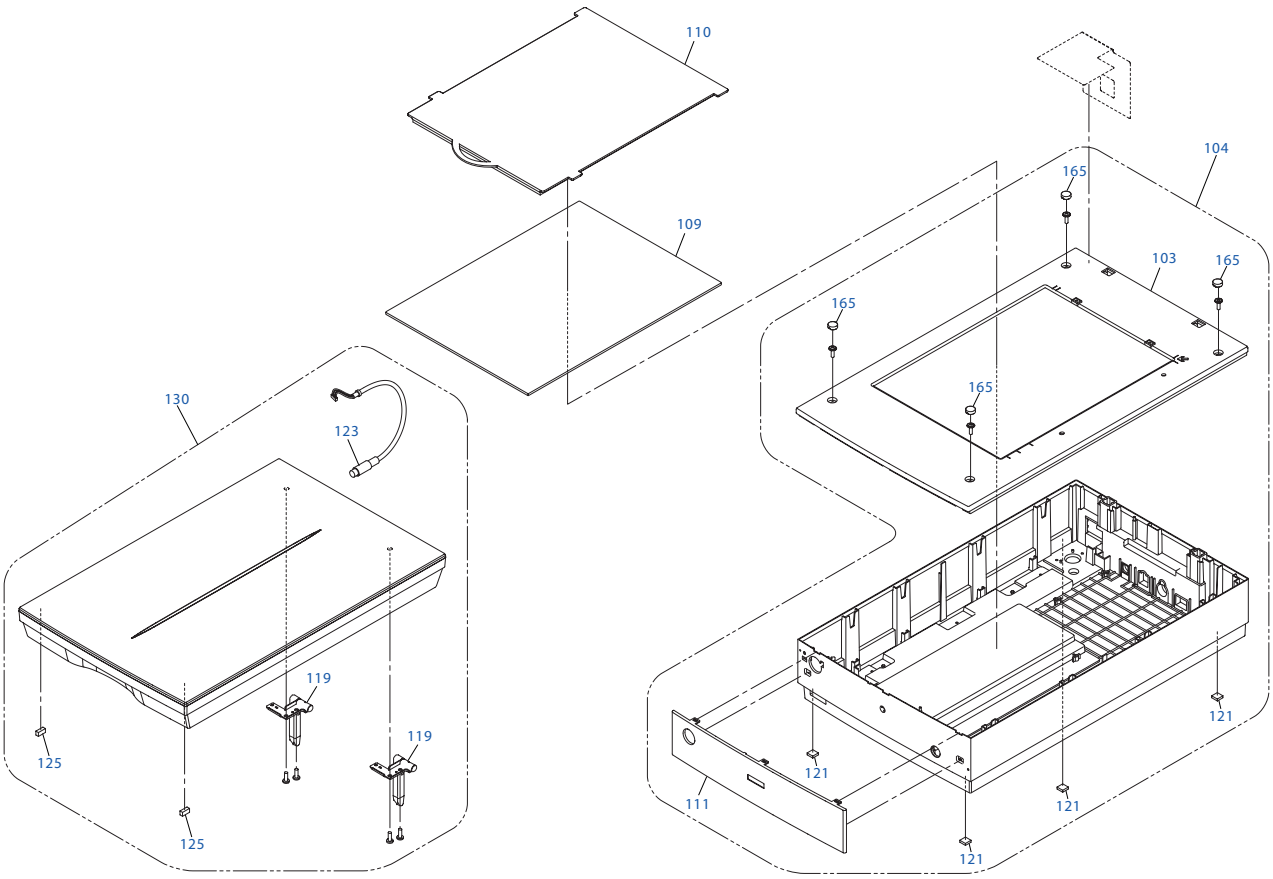


Figure 7-1. Exploded diagram (1)

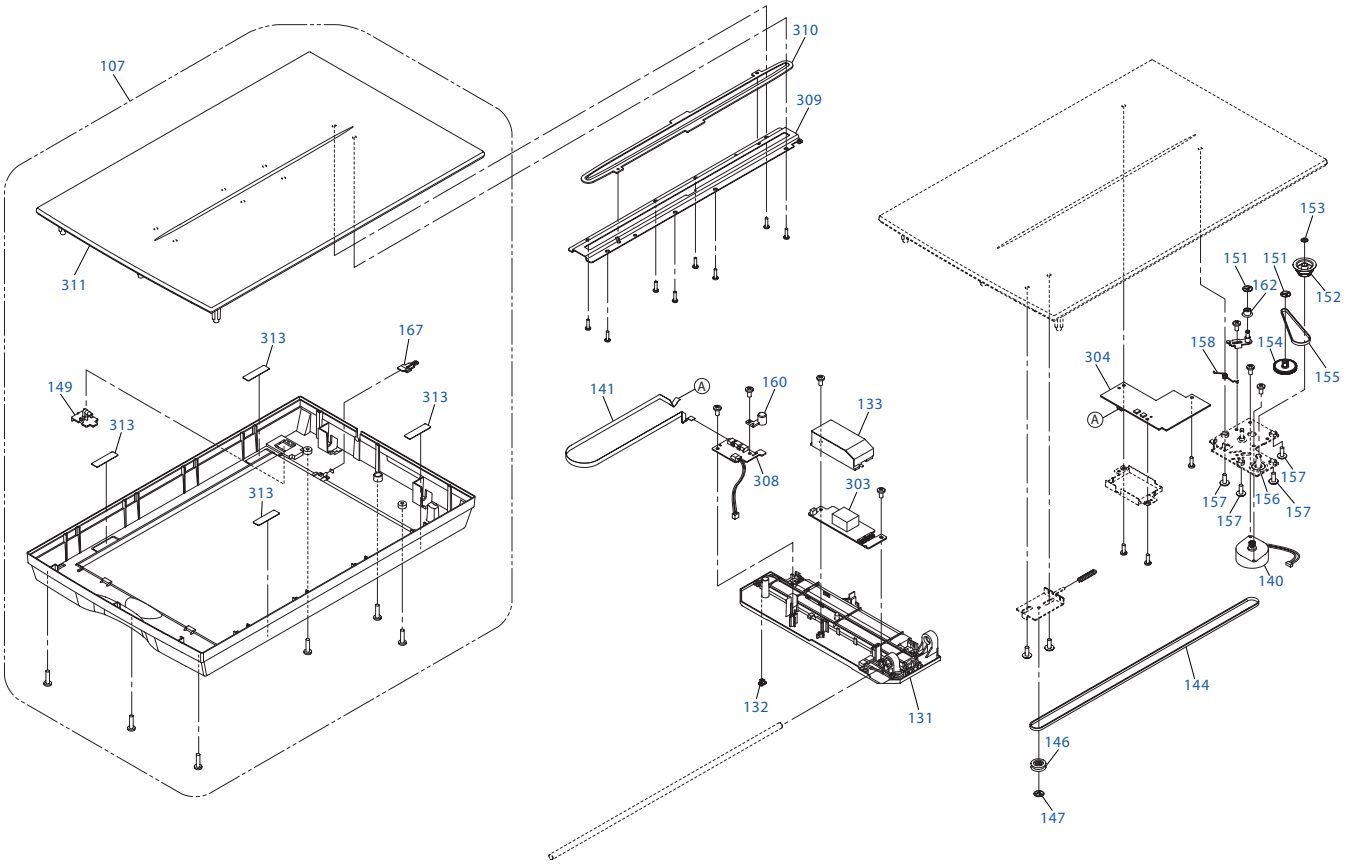
Downloaded from www.Manualslib.com manuals search engine



GT-X900 / PERFECTION V700 PHOTO / V750 PRO / V750-M PRO NO.2 REV.01 B178-CASE-011

Figure 7-2. Exploded diagram (2)

Downloaded from www.Manualslib.com manuals search engine



GT-X900 / PERFECTION V700 PHOTO / V750 PRO / V750-M PRO NO.3 REV.01 B178-CASE-021

Figure 7-3. Exploded diagram (3)

Downloaded from www.Manualslib.com manuals search engine

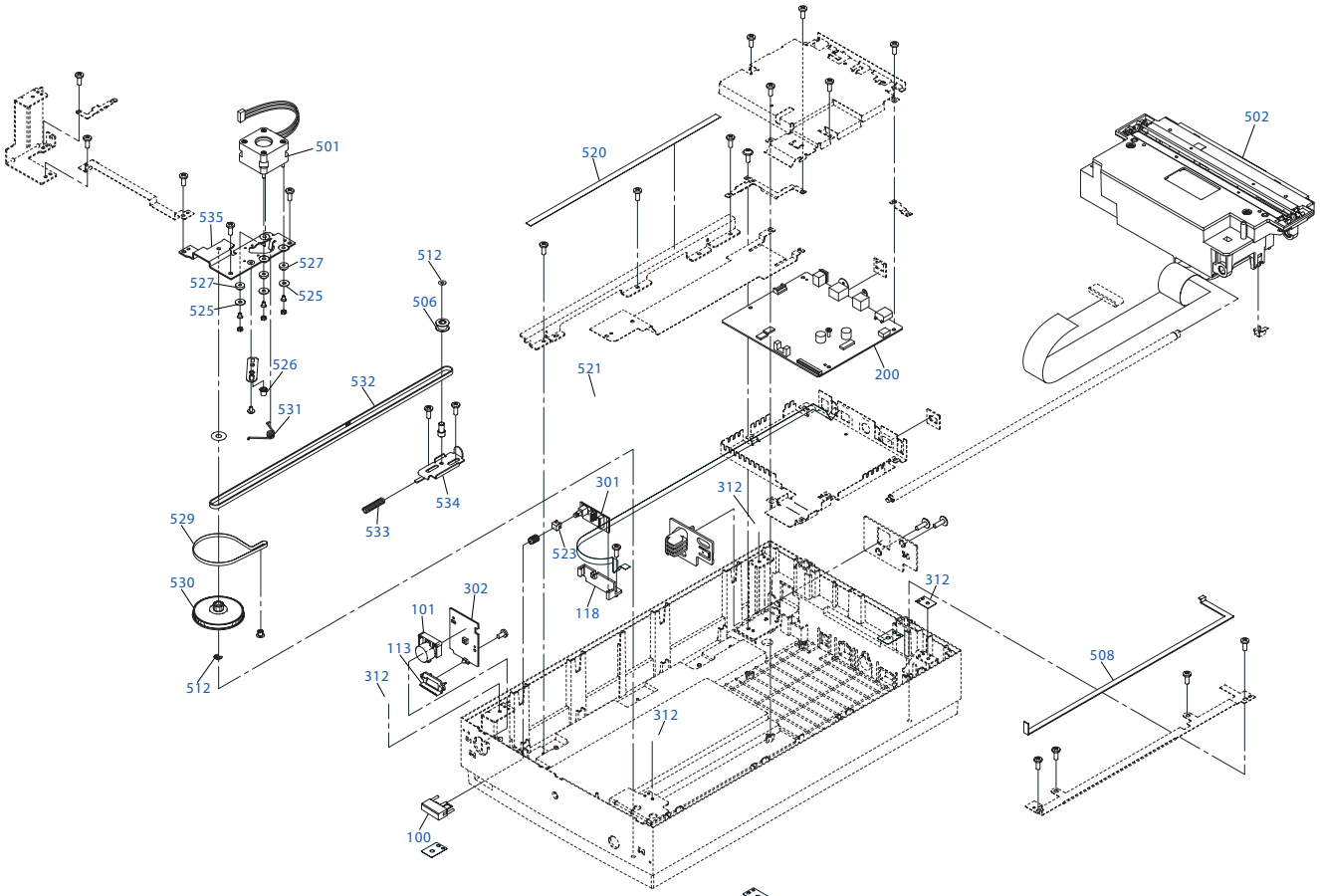


Figure 7-4. Exploded diagram (4)

Downloaded from www.Manualslib.com manuals search engine

7.4 Service Parts List

Parts list for EPSON Perfection V700 Photo

Table 7-2. EPSON Perfection V700 Photo Parts List

Ref No	Part Name
NON FIG	APPLICATION CD,EFS
NON FIG	SOFTWARE CD,ACF
NON FIG	APPLICATION CD,EFIGSP
NON FIG	USERS GUIDE
NON FIG	SETTING UP MANUAL
10	HOLDER ASSY.,BROWNIE
11	HOLDER ASSY.,4X5
13	HOLDER ASSY.,35
14	HOLDER ASSY.,SLIDE
17	FILM GUIDE,8X10
18	SPACER
401	POWER CABLE
403	AC ADAPTER
410	HARNESS,USB 2.0
100	BUTTON,POWER SWITCH
101	BUTTON,SCAN
103	HOUSING ASSY.,UPPER,ASP
104	HOUSING ASSY.,LOWER,ASP
107	CASE,TPU,ASP
109	MAT,COVER,DOCUMENT
110	HOUSING,MAT
111	COVER,FRONT
113	OPTICAL PLATE
118	HOLDER,FSW BOARD
119	HINGE ASSY.

Table 7-2. EPSON Perfection V700 Photo Parts List

Ref No	Part Name
121	FOOT
123	HARNESS,TPU
125	FOOT
130	TPU ASSY.,Lid,ASP
131	CARRIAGE,TPU,ASP
132	CHIP SLIDER
133	COVER,BOARD ASSY.,INVERTOR
140	MOTOR,TPU
141	HARNESS,DRV-SUB B
144	TIMING BELT,TPU
146	PULLEY,DRIVEN,TPU
147	E-RING,3,F/UC-3C
149	LOCK,CARRIAGE,TPU
151	FLANGE,PULLEY IDLE
152	PULLEY,DRIVE,TPU
153	PLANE WASHER,4.5X0.5X8,L/NA
154	PULLEY,IDLE
155	TIMING BELT,TENSION,TPU
156	FLANGE,PULLEY DRIVE,TPU
157	DAMPER,MOTOR,TPU
158	TORSION SPRING,49.9
160	COVER,LED
162	ROLLER,TENSION
165	CAP,HOUSING UPPER
301	BOARD ASSY., SUB
302	BOARD ASSY.,PANEL
303	BOARD ASSY.,INVERTOR,TPU
304	BOARD ASSY., DRV

Downloaded from www.Manualslib.com manuals search engine

Table 7-2. EPSON Perfection V700 Photo Parts List

Ref No	Part Name
308	BOARD ASSY., SUB
309	SUPPORT,OPTICAL PLATE
310	OPTICAL PLATE,TPU
311	HOUSING UPPER,TPU
312	SPACER,ADJUSTER;B
312	SPACER,ADJUSTER
313	SHEET,DUSTPROOF,TPU
200	BOARD ASSY., MAIN
501	MOTOR,CR
502	CARRIAGE ASSY.,ASP
506	PULLEY,DRIVEN
508	HARNESS,MOTOR
512	E-RING,4,F/UC-3C
520	SHEET,SLIDE
521	HARNESS,MAIN-SUB
523	SUPPORT,POWER SWITCH
525	SPACER,INSULATOR
526	PULLEY,TENSION
527	INSULATOR,MOTOR,CR
529	TIMING BELT,DRIVE
530	PULLEY,DRIVE
531	TORSION SPRING,98.18
532	TIMING BELT,CR
533	SPRING,PULLEY,DRIVEN
534	HOLDER ASSY.,PULLEY,DRIVEN
535	HOLDER ASSY.,MOTOR

Downloaded from www.Manualslib.com manuals search engine